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PLANNING AND PLAN IMPLEMENTATION

INCREASED EFFICIENCY IN 1980'S REPORTED

Moscow PLANOVYE KHOZYAYSTVO in Russian No 6, Jun 82 pp 42-51

[Article by Doctor of Economic Sciences Professor R. Belousov: "The Active Influencing of the Increase of Efficiency Is the Main Trait of Planning of the 1980's"]

[Text] The plans of USSR economic and social development function, on the one hand, as a concentrated expression of national interests and, on the other, as a specific program of actions, which is aimed at their realization. Precisely for this reason planning is the basic and at the same time the most important form of the conscious influence of socialist society on production. And, like any form, it is acquiring relative independence in its movement, that is, can move ahead or lag behind the increased requirements of development according to plan and the other objective relations of the dynamically developing economy of socialism. Such deviations are most likely at the meeting point of individual historical stages, when the tasks and structure of the development of the national economy change qualitatively and the methods and forms of national economic planning should be reorganized accordingly.

The analysis of real processes demonstrates that inadequate synchronism in the changes of economic relations and the reorganization of planning is by no means a theoretical hypothesis. The shortcomings in planning have been pointed out repeatedly in party documents of recent years. The demands on the level of the balance of all reproduction processes with the simultaneous tightening up of the policy of economy in every link of the national economy in order to ensure during the next few five-year plans an increase of the national income with practically no increase of the number of those employed in the sphere of physical production and with a negligible increase of accumulations, as well as primary material and energy resources, are increasing sharply precisely now, during the period of mature socialism.

Large-scale measures on the improvement of the methods of drafting long-term, five-year and annual plans have been implemented in response to these demands. It has been possible to rearrange and improve many things. The changes in economic and social relations, which have already occurred and should occur in the next period, dictate the need for the more consistent orientation of planning toward the increase of the efficiency of social production. It is necessary to direct and control more consistently the movement of the end results in inseparable unity with the decrease of the specific expenditures. In practice this means the mastering

of more effective methods and tools of influencing the economy of time in all the forms of its manifestation and of increasing the attention to factors of the intensification of reproduction.

As the experience of the 1970's showed, the goals being outlined in the area of production efficiency are hard to achieve: the gap between the increased possibilities of the scientific and technical potential of the country and the practically achieved results of its use is decreasing slowly. With higher levels of the soundness of the plan and the organization of its fulfillment the growth rate of the national income and, consequently, the absolute level of material wealth for accumulation and consumption by the early 1980's could have considerably exceeded the achieved indicators. Hence, large untapped reserves, which it is extremely necessary to put to use at the present stage, remained. For this the organization and smoothness of the work in all the sectors of the national economy should be increased, the organization of planning, the structure, forms and methods of work of planning organs should be improved.¹

This also determines the historical place of the 11th Five-Year Plan, which consists in ensuring in practice a change in the movement of the efficiency of social production: in increasing the level, while accelerating its growth rate.

National economic planning as the main form of the conscious use of the law of the economy of time at present is called upon to influence considerably more actively the process of the consumption of resources, by aiming the thrust of the national economic plan at the tightening up of the policy of economy. For these purposes in the plan it is envisaged to double the effective socioeconomic return from the increase of accumulations and the expenditures of living labor as compared with the past five-year plan, to use considerably more economically in the national economy metal, cement and other types of raw materials. In their aggregate these are the most intensive assignments on the increase of the efficiency of social production in the entire history of the Soviet five-year plans.

The new approach of planning to really making the socialist economy economical, was displayed in the most concentrated manner in the area of capital construction. Whereas during the past five-year plan the increase of capital investments in the sectors of physical production came to 32 percent, while the increase of the national income came to 21 percent, during 1981-1985 with an increase of capital investments of only 10.4 percent the national income will increase by 18 percent.

After familiarizing himself with these figures, one foreign economist said: "If you are able to accomplish these assignments, you will have achieved another economic miracle." It is possible to argue about the word "miracle," but the fact remains that such a sharp turn toward efficiency, as is outlined by the 11th Five-Year Plan, is changing qualitatively the proportions in the national economy and is serving as a necessary prerequisite for the overcoming of the difficulties which have arisen in recent years in the supply of production and the population.

In order to reveal more clearly the essence and uniqueness of the solution of the economic problems in the USSR at the present stage, one should compare the present

1. See "Materialy XXVI s"yezda KPSS" [Materials of the 26th CPSU Congress], Moscow, Politizdat, 1981, pp 143, 198.

situation with the most strained periods in the development of our national economy. To say nothing about the early 1920's, when the just created Gosplan actively participated in raising the economy to its feet from the state of dislocation from the war, it is possible to recall the 1st Five-Year Plan, when, as G. M. Krzhizhanovskiy noted in a report at the Fifth Congress of Soviets, accumulations accounted for nearly 50 percent of the national income.²

The years of the Great Patriotic War, especially its initial period, were even more strained, since important industrial centers were occupied by the enemy, while the front urgently required the sharp expansion of the production first of all of arms.

Finally, the early 1950's, when our industry in the production of output was one-third the size of U.S. industry, while the militant circles of London and Washington had drawn up a plan of a nuclear attack on the USSR, in order to turn its territory into "smoking radioactive ruins" by means of a massive strike, were very difficult. In face of this threat it was necessary again to strain the economy to the limit and in the shortest possible time to increase the production and defensive potential.

The present international situation has been aggravated: the aggressive circles in the West have again made a sharp turn in foreign policy from detente to power pressure, by threatening peace and imposing on the socialist community a new expensive round of the arms race. However, the strategic position of the Soviet economy differs radically and for the better from any difficult period in the history of our economic construction. First of all it should be noted that as a result of the intensive build-up of the production potential in the Soviet Union the per capita physical amount of national income has increased greatly. Thus, according to our calculations, the amount of material resources, which Soviet society can use at present for accumulation and consumption, on a per capita basis exceeds by 10-fold the level of prewar 1940 and by 7.4-fold the level of the early 1950's.

The fact that our country now produces many types of raw materials and power in the same, and at times in greater amounts as all the countries of the world did in the early 1950's, attests to the sharply increased resource potential of the USSR (see the table).

Production of the Most Important Types of Industrial Output in the USSR and the Entire World (USSR--1980, all countries of the world--1950)

	Electric power, billions of kWh	Petroleum, mil- lions of tons	Gas, billions of m ³	Steel, millions of tons	Mineral fertiliz- ers (in terms of 100-percent nu- trients), mil- lions of tons	Synthetic resins and plastics, millions of tons	Cement, millions of tons
USSR.	1295	603	406	148	24.8	3.6	125
All countries of the world.	988	521	191	192	15	1.6	134

2. G. M. Krzhizhanovskiy, "Izbrannoye" [Selections], Moscow, Goskomizdat, 1957, p 284.

In the production of energy carriers and the most important construction and building materials and the output of a number of machines the USSR has achieved volumes which 2.5 billion people--the entire population of earth--had just recently, in 1950.

It should also be stressed that at present the Soviet Union in the number of scientists, engineers and skilled workers considerably exceeds the United States. In the extraction of primary types of raw materials and energy carriers it has also exceeded its level and in practice has matched the most developed capitalist country in the value of the fixed production capital. In particular, the machine tool pool in the USSR is larger than in the United States. Under these conditions, it would seem, our national economy should not experience difficulties in material and technical supply. However, both when drafting plans and in everyday practice the meeting of the needs of enterprises and construction projects for rolled ferrous metal products, electric power, fuel, plastics, cement and other raw materials, equipment and means of transportation remains the most urgent problem. Planning is thereby forced to devote its main attention to the distribution of capital investments and critical material wealth, and not to the efficiency of their use.

How is one to explain such a contradictory situation, when, it would seem, there are enough primary resources of production, but the consumer experiences their shortage? There are several causes here. For example, the strain in the supply of electric power is explained by the growth rate of its generation during the past decade. Whereas during the 1930's, in spite of all the difficulties with accumulations, the rate of increase of the generation of electric power led by approximately one-third the development of all industry, while in the 1970's such a lead no longer existed, although precisely during this period the consumption of electric power increased quite rapidly in connection with the electrification of agriculture, transportation and the household of the population. Still the main cause of the arisen difficulties with resources is the increase of the output-capital ratio of production with a slowing of the growth rate of the productivity of living labor, as well as the slow decrease, and at times even the increase of the specific expenditures of metal, lumber, construction materials, fodders, mineral fertilizers and other types of raw materials for obtaining the final product. In other words, the vast accumulated wealth has not everywhere and not always been used skillfully.

Now the new approach to the assurance of a balance in the national economy also consists precisely in a turn to the better utilization of resources. It is well known that a balance is the conformity between needs and resources. However, it does not follow from this that once the balance in something has been upset, it is necessary to rapidly expand extraction or the production of those products and items, of which there is not enough. Unfortunately, such a one-sided point of view in the past frequently gained the upper hand. As a result the share of the extractive sectors in our economy greatly exceeds the corresponding indicators of some developed countries. Various factors, including international relations, show in this. But all the same, if we take into account that for every 1,000 rubles of output of the extractive sectors it is necessary to spend 3- to 4-fold more capital investments and 1.5- to 2-fold more living labor than in the processing sectors, it is easy to understand that in itself the raw material "flux," which to a certain extent has formed objectively in the national economic structure, is creating considerable additional difficulties and strains in the entire

economy. This is another argument in favor of approaching in a new way the problems of proportionality and balance in the national economy.

Let us recall that not only the needs (N_j) and resources (R_i), but also the specific standards of expenditures which connect them (a_{ij}) are the most important components of the balance. Hence the basic formula of the balance: not simply the conformity between the need and the resources for meeting it ($N_j = R_i$), but a more complex relationship:

$$N_j \approx \frac{R_i}{a_{ij}} .$$

Obviously, the lower the specific standards of the consumption of resources are, the more needs it is possible to meet with the same amount of them. On the other hand, excessive specific expenditures "eat up" resources and create difficulties in the supply of both production and the population, although the resource potential of the country has reached the highest level in the world.

The 11th Five-Year Plan, as was already noted, is called upon to make cardinal changes in the practice of economy and thrift. The corresponding decisions have been made. Now the main thing is to fulfill them. The results of the first year and a half of the five-year plan confirm that it is possible to achieve the outlined change in the movement of efficiency only by an intensive struggle and the implementation of a set of measures, including on the creation of largely new tools of the planning of efficiency, as well as the increase of planning discipline and the responsibility of economic personnel for the fulfillment of the assignments set by the plan on the economy of resources.

So far such tools have not been entirely worked out and tested in practice, but their basic arrangement does not arouse arguments--it is the ratio between the end results of production and the expenditures of resources. Therefore the question reduces to what to consider the end results and the expenditures, as well as how to measure and estimate them most accurately. In this connection, what functions in planning as the criterion and the specific form of the end results? First of all it should be emphasized that the criterion, that is, the principle of the evaluation of the end results, is governed by objective factors--the system of economic laws of socialism--and is common, uniform for all the levels of planning. Economic activity and, consequently, planning are now oriented toward the most complete meeting of the material and spiritual needs of society and toward the all-round development of the personality of the individual. Thereby the end results of individual and collective labor are determined from a uniform national economic position and are characterized by the impact in consumption, which presumes the output of only products of the appropriate quality, which society needs.

At the same time it is also impossible not to see another thing: the end result at different levels of planning has its own special forms of manifestation and is measured, evaluated by an entire system of indicators.

The amount of national income acts as a generalizing indicator of the results of the useful activity of all physical production during an individual year. It serves as a source for the making of accumulations and the creation of resources

for meeting the personal needs of the population. During the 11th Five-Year Plan more than three-fourths of the national income will be spent directly on meeting the increasing material and cultural needs of the people, that is, will enter the consumption fund. The orientation of production activity toward the end results is called upon to broaden the material base for solving new important social problems.

This requires the greater coordination of the planning of individual sectors and the national economy of the union republics with the planning of the national income. At present industry, agriculture, construction and transportation have a large proportion of the replacement fund. Thus, at many enterprises of industry the specific consumption of raw materials, materials and equipment per unit of finished item is much higher than necessary in the case of modern equipment and the organization of production. The return from the enormous resources, which the state is allocating for the development of metallurgy and machine building, is inadequate. In agriculture tens of millions of tons of grain are being used for fodder, while the end results in the form of meat and milk are low. The losses of the harvested crop are large. In construction there are still too many unfinished projects, while the specific consumption of cement, brick, lumber, glass and other materials exceeds by approximately one-third the level achieved by the leading construction organizations. As has already been noted in the press, cross hauls take up a large proportion in transportation. As a result, having achieved as compared with the level of the United States more than 80 percent of the production of industrial output, 85 percent of the agricultural production, 129 percent of the freight turnover of all types of transport and approximately the same amount of capital construction, all physical production creates only about 70 percent of the national income as compared with the level of the United States. Such a comparison attests that our national economy has reserves for increasing the effective end result by tens of billions of rubles.

On the sectorial level the end results are characterized by the degree of satisfaction of the needs of the national economy and the population by means of those products, in the production of which the sector specializes. Here the finished product and the end result of the economic operations of the sector should be distinguished. Let us illustrate this assumption using the example of machine building. Traditionally planning has directed the attention of machine building to the output of a specific finished product--a machine tool, a tractor, a motor vehicle or other equipment. However, from the national economic standpoint this is not yet the end result. The effective impact is obtained when the machine is operating: it transports freight or machines parts, plows the land or generates electric power. In this case many new things arise. For example, due to the lack of an entire range of necessary machine tools, transformers, cranes and trucks in the national economy machines with high technical and economic parameters are being used where small capacities are required. Due to low maintainability many devices are prematurely written off as scrap or are reconditioned with great expenditures. Consumers usually spend three- to five-fold more assets on the repair and operation of a motor vehicle and a tractor during the period of its use than are spent on their production. Since national economic planning limited the framework of its regulatory influence to the production and distribution of technological equipment, the artificial dissociation of the machine builders and the users of their products and the conditions of their use occurred. Here the necessary ties and conformity between the design of hardware components, their reliability, service life, maintainability, the consumption of spare parts, the expenditures of power

and other technical and economic indicators, on the one hand, and the evaluation of the results of the production activity of the machine builders, on the other, weakened.

To overcome such phenomena and to increase the purposeful influence of the plan on the increase of the national economic impact it seems expedient for planning in the future to shift from the elaboration of assignments on the output of machines and equipment in units, tons and other conventional units to the planning of the end results of their use in the national economy. The planning of the installed capacity which is ready for use might be, apparently, the first step toward this. In our opinion, all complex technical devices--automatic lines, conveyers, blooming mills, chemical plants and so forth--should be installed, adjusted and put into operation by the specialized subdivisions of machine building associations, which produce these devices. And the plan assignment for the corresponding plant should envisage not the production of a specific number of machines, but the end result--the placement into operation, the renovation or the capital repair of specific capacities with an indication of the wholesale price per unit of capacity put into operation.

In the extractive and raw material sectors the end result should be planned not in impersonal tons, but with allowance made for the useful properties of the product being produced. It has been known for many years now that in pursuit of tonnage the construction materials industry decreases the quality of cement (the average brand of cement), metallurgy strives to produce a bit more standard quality steel, as well as less labor-consuming and less economical types of rolled products. The problem of increasing the consumer properties of petroleum, cotton, sugar beets and other products remains very perceptible. Moreover, as a rule, it is technically possible to increase their quality substantially, but the monetary valuation tools reduce everyone to the same level and, in spite of the great national economic effectiveness of the increase of quality, enterprises, guided by the "faceless" value indicators and the corresponding cost accounting guidelines, not only do not improve the consumer properties of the output being produced, but frequently decrease them, seeking, in essence, an unreal economy of their own expenditures.

The questions of the quality and the full assortment of the production of necessary items are also a most important component of the planning of the end results for sectors which are engaged in the production of goods for the population. In the case of the existing system of the distribution of functions and responsibility the sectorial ministries should produce goods for the population in such a volume and assortment and with such useful properties so as to completely meet the needs and demand for their final product. Therefore the reorientation of planning toward the end results is a necessary prerequisite of the real increase of responsibility and the broadening of the independence of ministries, associations and enterprises in the matter of the more complete satisfaction of the specific needs of the national economy and the population. Is it possible in this connection to consider to be successful the activity of the USSR Ministry of Light Industry with allowance made for the fact that in trade it is not always possible to buy sheets and pillowcases, cotton socks, towels and other goods? It seems that, while having annually resources which exceed 9 million tons of raw cotton, national economic planning along with the sectorial ministries is capable of not allowing the formation of a shortage of goods which are made from cotton.

The indicators of the end results of the production activity of individual enterprises are distinguished by the greatest diversity. Now, when entire collectives specialize in the production of specific assemblies, units and parts, as well as the performance of repairs, casting and other technological operations, their output is characterized by a different degree of readiness for consumption. But it completes a specific production and economic cycle, acquiring, as a rule, an independent commodity-money form in the form of the price.

In spite of the fact that such output is frequently undervalued, it is important from the national economic standpoint for the maintenance of the proportionality of interindustry ties and the ultimate production efficiency. Thus, when one of the plants interrupts the deliveries of bolts to Bryansk, where clutches for motor vehicles of the Moscow Motor Vehicle Plant imeni Likhachev are produced, it turns out that the output of the finished product--a truck, the price of which is already thousands of rubles--is threatened due to a small thing--a bolt which is worth a few kopecks. The nonfulfillment of the plan on the output of trucks, in turn, can create serious obstacles in the transportation of raw materials, components and finished products. The cited example shows that under the conditions of a high level of socialization the concept of the final product always has a specific meaning. For the bulk of labor collectives the end result is the filling of the orders of related enterprises with the strict observance of the assortment and consumer properties of the products and the set delivery dates.

In generalized form the standard net output and the profit characterize the end results of economic operations at the level of the sectorial ministry, the association and the enterprise. Therefore the implementation of the well-known decree on the introduction of the indicators of the standard net output should be expedited and the attention to the profit should not be relaxed.

In spite of all the importance of the indicators of the end results, their adoption in practice alone does not bring about the required change in the quality of management. For this they must be combined with the standards of expenditures. In other words, the changeover to the planning of the increase of production efficiency is the changeover to the planning together of the output (final) and input (resource) parameters of the enterprise, the association or the sector as a whole. Just as it is impossible to separate the use value from the value of a commodity, the effective results objectively always interact dialectically with the specific standards of the consumption of resources.

In modern economic practice such standards act both as the object and as a more and more important tool of the national economic planning of the efficiency of social production. Here the two main stages of the purposeful use of such tools of planning practice should be distinguished. The first is connected with the substantiation of their specific level by the equalization of the individual expenditures and their reduction to the socially necessary standard in the form of the corresponding indicator or planned price, which at the same time also perform a balancing function, by coordinating consumption with the availability of material and financial resources. The second stage--the reporting of such a standard to each labor collective--in interaction with other planning levers and stimuli has a regulatory influence on the processes of the formation of the production costs and stimulates the policy of economy.

As experience shows, the following tendency is appearing clearly in planning practice. The greater the objective demands on the increase of production efficiency are, the more effective and rigid the mechanism of the reduction of individual expenditures to socially necessary expenditures should be. It is a question of that system of economic standards, which in practice predetermines the level of the socially useful return from the available resources--the production potential of each link of the national cooperation of labor.

The specific standard of the expenditures on the end results has its own objective content, which reflects the stable ties in the production relations between labor collectives and socialist society. The specific parameters of such standards are calculated and consciously established by planning organs with allowance made for the specific tasks and conditions of the implementation of the policy of increasing efficiency. From the point of view of planning the specific standards of expenditures are the unity of the objective and the subjective. Planning organs cannot establish the indicator of the consumption of a resource arbitrarily, at any level. The limit of the possible deviation of the form from the content in both directions should always be taken into account.

Under the conditions of capitalist market relations the price, which expresses the unity of the use value (the end result) and the value of a given commodity, performs the role of such a standard. Although it is established spontaneously, it acts very rigidly. If the individual costs of a private producer are less than the average social costs, he derives a surplus profit, but if they are higher, no one offsets the losses and adjusts the price standard. It comes down to bankruptcy.

During the NEP period the socialist state successfully used the monetary form of value for tightening up the policy of economy, to which the following letter of V. I. Lenin to the people's commissar of finance attests: "You have told me," he wrote, "that some of your trusts may in the near future be without money.... I believe that the trusts and enterprises operating on the basis of cost accounting were founded precisely so that they themselves would be responsible and, moreover, entirely responsible for the operation of their enterprises without losses. If this is not achieved by them, then, in my opinion, they should be brought to trial and punished with all the members of the board by lengthy imprisonment (perhaps, with the use after a certain period of conditional release), the confiscation of all property and so on."³

In the 1930's the use of standards of the economy of time in national economic planning was manifested first of all in the high rate of development of key sectors. One must not imagine these years as a period of the primarily extensive development of the economy. Both factors of economic accounting: the extensive--the increase of the total amount of working time by the elimination of unemployment, the increase of the proportion of those employed among the able-bodied population and so on, and the intensive--the increase of the skill of labor and its productivity, the better use of productive capital, as well as raw material, fuel and energy resources, were successfully used for solving major national economic problems. Such a combination of the factors of economic growth under those conditions made it possible in a 5-year period to double the volume of industrial production.

3. V. I. Lenin, "Poln. sobr. soch." [Complete Works], Vol 54, p 150.

In the 1940's and 1950's the attention to the standards of the specific expenditures decreased somewhat. This does not mean that the end results achievable in the shortest possible time were paid for at any price, although really it was expensive to "pay" for the gain of time in a number of specific cases. Nevertheless, as a whole the dynamism of the Soviet economy during those years was closely connected with the high rate of growth of labor productivity, the very effective use of capital investments, the increase of the output-capital ratio and the economical consumption of raw material and energy resources.

At the present stage the problem of decreasing the "expenditure" standards has been raised as the fundamental, basic problem. The very fact of norm setting often leads to the regulation and decrease of expenditures without the taking of any additional steps. First of all this pertains to the so-called coefficients of the technological expenditures of objects of labor and equipment. The greatest reserves, the putting to use of which means to increase substantially the possibilities for the further improvement of the way of life of the population, the increase of the balance in the national economy and the increase of the rate of economic growth, lie precisely here.

These reserves have been known for a long time, but so far they have been used inadequately. Such a situation is also connected with the fact that the methodology and tools of planning were not completely ready to actively influence the policy of economy. Thus, it has not yet been possible to "insert" the category of national economic efficiency in the system of indicators at any level of planning. It may be paradoxical, but so far it is not completely clear to economics scholars how to plan and evaluate in a generalized form the use of resources with allowance made for the time factor. Therefore, in economic practice indicators of the use of individual resources: the labor-output ratio, the capital-output ratio, the production cost, the specific capital intensity and others, are being used instead of a generalized form. But it has so far not been decided how to reduce them to a single system. It seems that the political economic category of the social costs of production, which have been modified with allowance made for the amount of employed productive capital, that is, $C + EF$ (C is the cost of the produced output, E is the sectorial standard of the efficiency of the use of productive capital, F is the amount of fixed capital employed in this production), should be used as a consolidated indicator of the expenditures.

The methodology of planning the efficiency of the process of reproduction also needs improvement. At present both in practice and in theory the questions of the production and distribution of output, capital construction and the sphere of the circulation of commodities and money are examined separately. Meanwhile in reality the national product in its movement passes through all the stages of reproduction. Therefore it is possible to maintain great national economic efficiency and stable proportionality only on the condition of a comprehensive approach to the planning of both the physical flows of material wealth and the change of its commodity-money forms. The experience of all our history shows that it is possible to achieve a high level of the national economic efficiency of production only under the conditions of the balance of these indicators.

So far the planning mechanism of the reduction of individual expenditures to the socially necessary expenditures and the reporting of the equalized standard to the labor collectives has also not been adjusted. At present hundreds of millions of

norms and standards of the use of working time, materials, power, technological equipment, fodders, land and other means of labor are being used in the planning calculations at different levels. Such a number of norms, which are moreover in constant movement, makes them practically uncontrollable. A significant portion of them are not economically sound enough, are obsolete and cannot ensure the influence of the plan on production for the purpose of saving time.

The commodity-money relations, which have now formed in the USSR, use many individual prices which in fact offset any expenditures of individual enterprises. Since planning so far has not elaborated sufficiently sound methods of the use of the standards of the socially necessary expenditures (either in physical terms or in monetary form), the use of the law of the economy of time is far from complete.

In order to improve the tools of the planning of the process of increasing the efficiency of socialist production and to increase its effectiveness, it is necessary to step up the work on bringing the levels of prices closer to the average social expenditures of labor, to improve or to elaborate anew consolidated standards of the consumption of resources for the obtaining of specific end results and to reduce them to a system which makes it possible to evaluate clearly the level of efficiency of production activity on the scale of the national economy, the sector, the region, the association and the enterprise. The degree of the consolidation of the technological standards of expenditures is determined by the degree of the consolidation of the indicator of the end results for the corresponding link of the national economy.

Such standards should be planned and should be reported as instructions "from the top down": by Gosplan to the ministry, by the ministry to associations, by the association to the enterprises belonging to it. It is important for them to be intensive, but practicable. For their substantiation it is advisable to use more extensively the data on the average level of expenditures, which has been achieved in the sector by the group of leading enterprises and by foreign countries. The drive for great production efficiency at the present stage requires that economic managers concentrate their efforts on the fulfillment of the plans, while avoiding adjustment of the plan assignments. On this condition the assignments on the economy of labor, raw materials, power and productive capital will serve as an adequate stimulus for the elaboration of effective measures in the area of scientific and technical progress, the intensification of specialization, the renovation of operating capacities, the increase of the skills of workers and engineering and technical personnel, the use of advanced know-how and the scientific organization of labor.

In conclusion I would like to stress once again that development according to plan and efficiency are the result of the real relations between people. Balances, standards and other planning indicators are only the external form of such relations, which contributes to their regulation and rationalization. Therefore planned development is not only foresight, but also action in conformity with a plan on an indispensable condition--strict discipline and great responsibility for the fulfillment of the set assignments and standards, that is, for the observance of the conditions of the smooth functioning of the national economy. As was noted at the 26th CPSU Congress, the very tenacious practice of adjusting the plans in the direction of their decrease disorganizes the economy, demoralizes the personnel

and accustoms them to irresponsibility. That is why to successfully plan the increase of efficiency means not only to increase the quality of the plans themselves, but also to make the demands on the discipline of their fulfillment more exacting.

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PLANNING AND PLAN IMPLEMENTATION

RESERVES OF ECONOMIC GROWTH

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[Article by Doctor of Economic Sciences B. Plyshevskiy: "Reserves in the Planned Economy: Composition and Means of Mobilization"]

[Text] In the accomplishment of the task posed by the 26th CPSU Congress of the acceleration of scientific and technical progress and the changeover of the Soviet economy to the intensive path of development an important role belongs to the mobilization of the reserves available in the national economy. The use of the increased production, scientific and technical potential and natural resources of the country in the interests of increasing the well-being of the people, the stability and dynamics of the development of the national economy and the fulfillment of the plan assignments depend on the scale and effectiveness of this work.

Under present conditions, when the production volumes have increased immeasurably, while the possibilities of committing to the national economy new material and manpower resources as compared with the preceding period have decreased relatively, the mobilization of reserves and the decrease of losses, the improvement for these purposes of the methods of socialist management are becoming a more and more important direction of the implementation of the economic policy of the party.

In the practice of the planned management of the socialist economy a specific system of the monitoring of the availability and use of reserves and the measures of economic influence, which are aimed at their mobilization, has been developed. It is based first of all on the corresponding mandatory statistical reporting, which is drawn up according to a uniform method, of associations, enterprises and other economic organizations in all sectors of the economy on the availability and use of the resources at their disposal (manpower, fixed and working production capital, capital investments), the specific expenditures of these resources in the process of the production and marketing of the output and the indicators of the efficiency of production and capital construction. The submitted data are used when substantiating the production program of enterprises, associations and ministries for the planning period and when compiling material and value balances and are used for analyzing the fulfillment of the plan assignments and evaluating the results of the work of production collectives.

The monitoring of reserves includes the periodic conducting by statistical organs, as well as ministries and departments of sample surveys of the use in sectors and

at enterprises of working time, production capacities, the consumption of the most important types of output of industry and agriculture, the time of the construction and assimilation of the rated capacities of enterprises and projects, which have been put into operation, and others. The corresponding statistical reporting is introduced as required. Thus, in the 1970's reporting on the utilization of the production capacities of industry was established, while during the 11th Five-Year Plan the indicator of the degree of their loading is being approved in the state plans. The reporting on the saving of material expenditures is also being extended.

The use in planning at all its levels of economic norms and standards of the expenditures of resources and the degree of their utilization is an important tool of the planned mobilization of reserves. At present a system of standards, which encompasses the norms of the expenditures of labor, fuel, power and various types of raw materials and materials, the utilization of machines and equipment, the specific capital investments and the duration of construction, the standard service life of buildings, structures, machines and equipment and other components of the fixed capital, the time of the assimilation of the rated capacities and others, has been developed. It is used when determining the need for resources for the fulfillment of the planned production program, as well as when establishing the plan assignments on the increase of production efficiency and financial indicators.

The standards are revised periodically with allowance made for the increase of the technical level and the improvement of the organization of production in the corresponding sectors, while their composition is gradually being enlarged.

Mandatory plan assignments on the increase of production efficiency are being approved for ministries, associations and enterprises for the purpose of the more active mobilization of reserves. Moreover, with a change of the conditions and tasks of economic construction their composition is revised. Thus, when carrying out the economic reform in 1965 the determination of the assignments on the increase of labor productivity was left to industrial enterprises and construction organizations, while the corresponding indicators for the ministries and sectors were determined according to the total of the plans of enterprises. The question of the planning of the cost of production in industry and of construction and installation work in construction was also settled in the same way. Since the 8th Five-Year Plan the right to determine this indicator has belonged to the jurisdiction of enterprises. At the same time the role of the indicator of the profit, which began to be approved centrally among the most important plan assignments, was enhanced in the planning of production and the evaluation of the fulfillment of the plan. At the same time the procedure of determining the profitability changed. It began to be calculated as the ratio of the profit to the value of the capital which was attached to the enterprise (the fixed production capital and the standard of internal working capital), instead of the procedure previously in effect of comparing the profit and the cost of production (operations).

Starting with the 9th Five-Year Plan the assignments on the increase of production efficiency were formed into an independent section of the state plans and the plans of ministries, associations and enterprises.

The system of indicators of efficiency includes along with consolidated indicators the indicators of the efficiency of the use of labor, fixed production capital and

capital investments and the material expenditures. Assignments on the increase of labor productivity, the profit (in some sectors of industry the decrease of the production cost), the saving of the most important types of material resources (fuel, power, metals and others) and the economic impact from the implementation of scientific and technical measures have been approved as directive assignments in the state plan for ministries, associations and enterprises during the 11th Five-Year Plan.

The planning of the increase of the efficiency of social production during the 11th Five-Year Plan is being reorganized on the basis of the decisions of the 26th CPSU Congress, the requirements of the implementation of the decrees on the improvement of the economic mechanism and the stepping up of the work on the economy of fuel, energy, raw material and other material resources. The list of assignments with respect to this section of the plan, which are being established for ministries, associations and enterprises, has been enlarged and the role of the indicators of efficiency when drafting plans and evaluating their fulfillment has increased. Assignments on the decrease of the number of workers engaged in manual labor and the economic impact of new equipment are included in it, the number of assignments on the economy of material expenditures and the commitment to the economic turnover of secondary resources of fuel and raw materials has been increased. Starting in 1983 in all the sectors it is envisaged to approve assignments on the decrease of the cost of production (operations) with the distinction within them of the limit of material expenditures.

The planning of labor productivity in the sectors of industry is being changed over to the indicators of the standard net output and other measurers of the production volume, which describe more accurately its end results, and in industry to the indicators of the value added. Work is also being performed on the improvement of the physical measurers of the output of ferrous metallurgy, machine building and other sectors.

The increase of the role of the economic stimuli of the mobilization of reserves is an important feature of the economic mechanism being adopted in industry and construction. The use in planning and cost accounting of stable standards of the wage, the distribution of the profit between the establishment and the budget and the creation of economic stimulation funds is gradually being broadened. In the industrial ministries a unified fund for the development of science and technology has been formed, higher markups on the wholesale prices of products for the improvement of their technical and economic characteristics and quality have been established. The use of price reductions for the production of obsolete items is being extended.

The commitment of reserves to the economic turnover is also being encouraged by the formation of economic stimulation funds subject to the meeting by associations and enterprises of the contractual obligations on deliveries of products. The planning and evaluation of the work of construction organizations and their formation of economic stimulation funds have been carried out since 1981 on the basis of the indicators of the commodity construction production, with allowance made for the settlements between clients and contractors for completely finished enterprises, which have been turned over for operation, start-up complexes, sections and facilities, which have been readied for the production of output and the rendering of services.

When discussing the question of ways and means of mobilizing reserves in the scientific literature, among planning and economic workers two extreme points of view are expressed at times. The supporters of the first one devote the main attention to the improvement of the methods of the analysis and measurement of the reserves and their consideration when establishing for sectors and production collectives plan assignments on the increase of production efficiency. According to the second point of view, the use of economic levers and stimuli and the consolidation of cost accounting for increasing the interest of enterprises in the reduction of expenditures are decisive for the mobilization of reserves. Accordingly in one case the emphasis is placed on the strengthening of centralized state planning and in the other on the decentralization of the making of planning decisions and the granting of greater rights to associations and enterprises.

During the more than six decades of the planned management of the socialist economy in our country during individual periods, on the basis of specific conditions and socioeconomic tasks, in practice preference was given to one of these means. But the overall approach to the problem of improving the management of the national economy in the decisions of the party and government was always formulated unequivocally--the need for the consistent implementation in economic management of the principle of democratic centralism.

This requirement is fully embodied in the measures specified by the decrees on the improvement of the economic mechanism, which were adopted in 1979. The steps outlined by them link fundamentally both directions of the mobilization of reserves. In this case the effectiveness of the use of the new methods of management depends on the level and organization of the performance of practical work of various organs of economic management in each of these direction.

The problem of reserves in its theoretical statement was elaborated long ago in the political economy of socialism. However, its practical aspects were limited for a long time to the substantiation of the need for the formation of reserves (statewide, on the level of sectors, enterprises) for the assurance of the proportionality of the development of the national economy in the case of various deviations from the set plan assignments. An oversimplified idea of the possibility of the full consideration in the plans of all the available reserves was characteristic of many works.

The study of the composition and amount of reserves due to the incomplete utilization of resources and the elaboration of methods of their mobilization were almost not examined by political economy and were considered the subject of applied economic disciplines--statistics, planning, finance, sectorial economic systems. The detailed study of the theoretical and methodological aspects of the problem of reserves (their objective content, the causes of formation, the methods of measurement and others) at the different levels of management of the national economy was begun comparatively recently. It is considerably inferior to the development of other sections of political economy--the elaboration of the problems of socialist expanded reproduction, its rates and proportions, the theory of efficiency, cost accounting and others.

In this, apparently, lies one of the causes of the incompleteness of the information on the amount of reserves in the case of the use of individual types of resources, the incomparability of the materials pertaining to them and the sometimes

unjustified differences in the methods of measuring and estimating the reserves with respect to various components. Although the quality and completeness of the data on the reserves of production during the past decade have improved appreciably, the materials of statistical reporting and sample surveys still do not conform in everything to the tasks of the improvement of planning and economic analysis.

Many procedural questions of the determination of the reserves also remain debatable. Let us take, for example, the very concept of reserves and its relationship to the concept of losses. Frequently reserves are identified with losses or any type of inefficient use of resources is considered losses. In conformity with such an approach it is proposed to group with reserves the entire potential additional increase of the production of output as a result of the elimination of losses.

The concepts of reserves and losses, in our opinion, should not be identified. The inefficient use of resources in far from all instances is equivalent to losses, since it is possible to lose what has been produced (output, the material components of the accumulated national wealth). It is not entirely legitimate to use the concept of losses in those instances when it is a question of the incomplete utilization of productive capital and capacities and the incomplete use of manpower during a set period of working time. Here it is not losses that occur, but a decrease of the efficiency of the use of resources; the resources themselves are not lost. There exist, therefore, reserves which do not coincide with losses in the direct meaning of this term. According to the type it is possible to group them with the reserves which are connected with the elimination of the idle time of resources (manpower, fixed production capital) and with the withdrawal from circulation of production stocks of fuel, raw materials and materials.

It is hardly correct to group entirely with reserves the losses of output and various components of the productive capital. Some portion of them is unavoidable in the case of any equipment and production technology. Therefore, in our opinion, the reduction of losses to their socially permissible, standard level functions as a real reserve.

From what has been said it follows that the concept of reserves is broader than the concept of losses and includes the possibilities of the increase of the production volume both by the reduction of the direct losses of resources and by means of their more complete utilization in the production process. There is also another type of reserves, which goes beyond the above-mentioned limits. It is the reduction of losses when delivering the created product to consumers in the process of circulation and distribution and in the very sphere of consumption, which makes it possible to increase the degree of satisfaction of the needs of society within the achieved production volume.

The mobilization of reserves, as a rule, involves additional expenditures, the possibilities of their commitment to the economic turnover by the implementation of purely organizational measures without the change and improvement of the material and technical base of sectors and enterprises as a whole are quite limited. At the same time the additional expenditures, which are aimed at the use of reserves, are highly effective. They are, as a rule, considerably less than the expenditures for the increase of the volumes of the production of output and the increase of productive capital, which is required for this.

The question of the objective measurement of the amount of reserves remains the theoretically most complicated question. In some works it is estimated on the basis of the comparison of the domestic level of the specific expenditures of resources with the corresponding indicators in other countries, most often in the developed capitalist states. In recent years such comparisons have also been made with the CEMA member countries. Their data attest to differences in production efficiency, which stem from the different technical level of production, its different structure and other objective factors. Only with great conditionality and within a very limited framework can the differences of the specific expenditures be considered a measure of the really existing reserves. The conclusions from such comparisons are correct when it is assumed that the achievement of an approximately equal level of the technical equipment and organization of production makes it possible to decrease the specific expenditures of resources in the country to the best world indicators.

Approximately the same limitations also arise when estimating the reserves by comparing the results of the work of different enterprises of the same sector in the country. The differences in the specific expenditures of resources here are also governed in many ways by the different technical equipment and structure of production within the sector. The differences in natural conditions and transportation costs, especially in the fuel and energy and the raw material sectors of industry, agriculture and construction, also have a substantial influence in our country.

Thus, the method of estimating reserves by comparing the indicators of the specific expenditures at different enterprises of a sector is applicable when the enterprises being compared belong to approximately the same group with respect to such attributes, which do not depend on them, as the technical equipment and natural conditions (the rent factor).

The comparisons of enterprises according to the degree of fulfillment of the set plan assignments and the growth rate of the volumes of the production of output, the increase of labor productivity or other indicators as compared with those which existed in the past or to the achieved base are little suited for the identification of reserves. The former criterion presumes that a plan of equal intensity has been set for all production collectives; the assumption, which is similar in content, about the identical utilization of the possibilities of the further development of production and the improvement of its quality indicators, which individual enterprises have, is the basis for the latter criterion.

In reality, enterprises have resources which differ in quality and efficiency and due to the different efficiency of management utilize their production potential differently. The work on the improvement of the economic mechanism is weakening the influence of the differences in the organization and management of production. But the objective need for the preferential allocation to priority sectors and works of highly skilled staffs of workers and specialists, capital investments, new equipment and the most efficient types of fuel, raw materials and construction materials is not disappearing.

The soundest solution when choosing the base of the estimate of reserves is the use for these purposes of the standards of the expenditures of labor, material resources, capital investments, the time of construction, the performance of planning and design work, the assimilation of newly introduced capacities, the service

life of fixed capital and others. The named standards have been used for a long time in planning at all levels of the management of the national economy--for sectors, the individual directions of scientific and technical progress, associations and enterprises--and are revised periodically with allowance made for the use in production of the achievements of technology and the change of its structure and organization. The amount of the reserves in each case is determined by comparing the actually achieved, the planned and the standard indicators.

The advantage of such an approach consists in the fact that the specific conditions of the development of production in each unit of planning are taken into account through the norms. At the same time the definite limitedness of the use of this method is also obvious. The corresponding norms are differentiated in the national economy--by sectors and economic regions; in the sectors--by the most important products, associations and enterprises, directions of technical progress; in the primary production unit--by the diverse specific list of output being produced and work being performed. The majority of the norms are individual: the elaboration and use of norms of expenditures, which are uniform for the national economy and the sectors, run into difficulties both due to the differences of the conditions of production and as a result of the noncoincidence of the list of products and operations, with respect to which the corresponding norms exist.

The reliability of the estimate of the amount of reserves in the case of such an approach depends on the quality and the soundness of the norms themselves. Experimental statistical norms are being used in many sectors, at many associations, enterprises, including agricultural and transportation, and construction projects. Often the technical and economic norms are also not sound enough.

The decrees on the improvement of the economic mechanism regard the improvement of norm setting as an important direction of the increase of the level of all planning work in the national economy. It is envisaged to elaborate a system of interconnected progressive technical and economic norms and standards according to the types of operations and expenditures (saving) of labor, raw materials, materials, fuel and energy resources, the determination of the need for equipment and cable items, as well as standards of the utilization of production capacities and specific capital investments. USSR Gosplan has approved procedural instructions on the creation of such a system. The completion of the outlined work will make it possible to place the study of reserves on a more solid procedural and information base.

The system of indicators, which characterize the reserves available in the national economy, is represented most completely in the materials of statistical reporting and sample surveys. The tasks of its development consist first of all in the strengthening of the link with the main sections of the state plans and statistical reporting, the achievement of the greater coordination of its individual sections and the improvement of the indicators of reserves and the methods of their measurement.

It is legitimate to regard this system as the development and specification of the corresponding sections of the balance of the national economy--the balances of the national product, fixed capital and manpower resources. The indicators of the reserves at the sectorial level and for ministries (the breakdown by departments), as well as at the level of the primary link are the development and supplement of the

system of planning and reporting indicators of sectors and enterprises. Passports are a new procedural tool of the analysis of the reserves of associations and enterprises. Their data reflect the amount, structure and technical level of the resources assigned to them and the degree of their utilization.

The system of indicators of reserves can be represented by two large sections--the use of the basic types of resources and the produced output.

The indicators of the first section characterize the availability and the degree of utilization of such factors as labor, fixed and working productive capital, capital investments and natural resources.

With respect to the attribute of availability the reserves are defined as the ratio of manpower resources and the number of those employed in the national economy, the available and used production capacities, the stocks of fuel, metals and other types of industrial raw materials and materials, the stocks of agricultural products, the proved deposits of minerals and the deposits being worked, the areas of farming lands, the reserves of lumber, water and so on.

The data on reserves in the area of the use of resources are represented mainly by physical indicators. With respect to some of them within the balances of manpower resources, production capacities and minerals statistical reporting exists and calculations are made for the planning period. However, a large portion of the information (especially on the involvement of resources in the production process, the idle times of manpower, machines and mechanisms, production capacities) is obtained as a result of sample surveys by sectors. The periodicity of such studies in the 1970's became more frequent, but their programs usually relate to some one question and encompass a different composition of sectors and enterprises. In our opinion, it is necessary to switch to the comprehensive conducting of these studies, which include the simultaneous study of the reserves of all types of resources (labor, production capacities, fuel, power, raw materials and materials).

With respect to the degree of consumption the reserves are characterized by the following indicators: manpower resources--by the use of the annual available amount of working time, the proportion of absences from work, the losses of working time in excess of the established standards; fixed production capital--by the degree of utilization of production capacities during the planned period of time of their operation, the shift coefficient of machines and equipment; mineral resources--by the degree of extraction of minerals from the ground, the effective use of felled timber, the water taken in from bodies of water and so on.

It is advisable to take as the basis of the groupings of the indicators of the second section two principles: the sectorial principle--the distinction of the output of industry, agriculture and construction and the distinction of the phases (stages) of the process of expanded reproduction--the production, circulation, accumulation and consumption of the gross national product.

The data on the reserves, which pertain to the use of the produced output, are represented not only by physical, but also to a greater extent by value indicators, which is due to the extensive use of value measurers in the planning and accounting of the national product. The peculiarity of this section also consists in the possibility of determining a considerably larger number of indicators than in

the first section directly in accordance with the statistical reporting and planning data by comparing the actual (planned) specific expenditures with the standards. But here, too, when analyzing a number of questions the conducting of sample surveys and special studies is required.

In the case of the study of reserves with a breakdown by sectors the problem of the generalization of the data on waste products and the losses of specific types of output into economically more significant indicators like the coefficient of the effective utilization of rolled metal products merits attention. Such indicators should, in our opinion, be determined with respect to fuel and energy resources, lumber, plastics and other construction materials and agricultural raw materials.

The experience of the work on the improvement of the economic mechanism has shown the need for the increase of the cost accounting liability of enterprises for the end results and the allowed inefficient consumption of resources. Thus, the regulations, which permit the writing off of losses to the cost of the products of industry and agriculture and construction and installation work, need to be made stricter. The question of the decrease of the established norms of losses for many products is also urgent. The strengthening of the economic levers of the efficient use of products would be in full accord with the reduction of losses. The expenditures of society, which are due to the exceeding by enterprises of the planned rates of consumption, should be recovered mainly by the reduction of the profit which is left to production collectives for the financing of capital construction and the formation of economic stimulation funds. At the same time it is justifiable to leave at their disposal an overwhelming share of the profit from the decrease of material expenditures in excess of the established norms and to abolish the practice of the redistribution of the profit by ministries among the enterprises which work poorly and well in the case of settlements with the state budget.

The methodology of evaluating the losses of agricultural products needs improvement. After 1953, when the estimate of the yield by type (the grown crop) was abolished, the data on the granary yield of the products of plant growing became the basis of such an analysis. As a result the control of the losses when harvesting the crop to a considerable extent was lost. It is expedient, apparently, to restore in some form the sample surveys of the grown crop and to encompass by them along with cereal crops the production of vegetables, berries and fruits, fodders and other products of plant growing. The line items, in accordance with which the losses of agricultural products during transportation and storage at the warehouses of procurement organizations, at kolkhozes and sovkhoses, as well as in the very process of consumption--in the household of the population, at public dining enterprises and at organizations of the nonproduction sphere, which serve the population--are taken into account, require specification and a more detailed interpretation.

The analysis of the reserves in the process of accumulation, first of all in the sphere of capital construction, is of great importance for the elaboration of measures on the increase of the efficiency of social production. For construction the following reporting data on the reserves existing in the sector exist: the value of halted and temporarily halted construction, the written off planning estimate, the losses of construction materials and working time, the idle times of construction equipment, the amount of unfinished construction. Statistical organs are conducting studies of the duration of the construction of projects, which have been

included in the state plan, the specific capital investments and other indicators. The All-Union Bank for Financing Capital Investments is taking into account the change of the estimated cost of enterprises and projects under construction as compared with the approved planning estimate. Studies of the periods of the assimilation of the design indicators on the output of products, labor productivity and the production cost at enterprises and facilities, which have been newly put into operation and renovated, are being conducted with respect to the client sectors.

For the improvement of the analysis of the reserves of the increase of the efficiency of accumulation it seems expedient to examine the question of the possibility of introducing in statistical reporting on capital construction the estimates of the performers for the most important projects, which show the ratio of the planned and balance sheet cost of the enterprises and facilities put into operation with an indication of the reasons for their difference.

The generalization and grouping of the materials of reporting and sample surveys in the sectors of transportation, material and technical supply, the procurement of agricultural products and trade are required when studying the reserves in the sphere of circulation. In addition to the data on the losses of products in these sectors it is expedient to use such indicators as the distance and time of the delivery of freight to clients and consumers, the transportation costs, the amount of reserves of commodity stocks in value terms and in physical terms (with respect to the most important types of reserves) and the time of their circulation, the marketing costs and others.

In our opinion, the problem of the more thorough study of the reserves and losses in the case of the use of products for the meeting of the needs of the population, organizations and institutions of the nonproduction sphere of the national economy is urgent. The comparison of the resources of consumer items with respect to all the sources of their receipt with their actual consumption is a promising direction of such an analysis. In accordance with the customary method of planning and accounting it is customary to assign the group of goods, which have been purchased by the population and the organizations and institutions serving it, to the actual consumption of the corresponding period. However, in reality not all of the foodstuffs and especially the nonfood consumer items, which have been sold to the population through trade and have been received through other channels, will be consumed during this period. A portion of the durable goods is used for the accumulation of property of the population and the increase of stocks, while a significant amount of the foodstuffs and other consumer items spoil and form waste of different kinds. In our opinion, regular statistical studies of the actual effective use of their resources should be organized for determining the amounts and structure of the inefficient consumption of consumer items.

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PLANNING AND PLAN IMPLEMENTATION

MEANS OF CONSUMER INFLUENCE ON PRODUCTION

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[Article by V. Smirnov, chief of a sector of the Scientific Research Institute of Economics attached to USSR Gosplan: "The Plan and the Increase of the Influence of Consumers on Production"]

[Text] The proportionality of social production is a necessary means of achieving high end national economic results. In the case of the planned management of the economy the improvement of the end results of production appears in the increase of the degree of satisfaction of social needs, that is, is determined by the extent of the conformity of the amount and structure of the produced material wealth to the amount and structure of the specific social needs.

Obviously, such an interpretation conforms most completely with the content of the ultimate proportionality. The emphasis on the general, consolidated proportions, which for the present predominates, can and should be regarded as an orientation toward the intermediate result, the intermediate proportionality. In this connection it seems important to expand the ideas about the mechanism of the effect of the law of planned, proportionate development.

The 26th CPSU Congress indicated the need "to make the demands both on planning discipline and on the quality of the plans themselves more exacting."¹ A definite step in this direction is the search for reserves for the improvement of the economic mechanism of the assurance of the planned proportionality of the production and distribution of specific types of products.

The most important interconnected components of the named mechanism are: the centrally established physical indicators of the production and delivery of products; the limits of resources; the system of general economic (value) indicators of the planning and stimulation of production, which are approved by the superior organization and form the real criterion of the activity of the supplier; the form and procedure of the conclusion and fulfillment of economic contracts; the forms of the economic liability of the economic units (suppliers and consumers) and their workers for the violation of planning and contractual discipline; prices and financial and credit levers; the reserve funds of material and financial resources.

For the purpose of raising the question.

Such a tool of the planned management of the economy for the most part creates all the objective prerequisites for the achievement in the national economy of the necessary proportionality of the production of specific items. However, the adjustment and coordination of the listed components are necessary for the complete utilization of these prerequisites, otherwise the degree of satisfaction of specific social needs decreases and a shortage of many types of products is artificially formed.

Under these conditions in the interrelations between the supplier and the consumer the positions of the supplier are especially strengthened. Their interests frequently become dominant, overwhelming the interests of the consumer. Production is transformed from the process of creating the material wealth necessary for the consumer as if into an end in itself, which is at variance with the national economic interests. Therefore the task of creating the conditions for the active influence of the consumer on production and the subordination of the interests of ~~production~~ to the interests of consumption is arising in all urgency.

Among economists there exists the opinion: a real increase of the influence of the consumer on production is possible only in the case of saturated demand. As a whole it is possible to agree with such a stand, but in practice it is difficult to solve the indicated problem.

The search for means of accomplishing the problem in question is among the basic directions of the improvement of the economic mechanism in all the countries of the socialist community. Of the most significant steps in this area one should first of all name the process under way of transforming the five-year plan into the main form of planning at all the levels of economic management (this direction of the improvement of the economic mechanism solves many problems, and, as will be shown below, it is also necessary for the solution of the problem being discussed). In a number of socialist countries (Bulgaria, Romania, the CSSR and others) for ensuring the continuity of planning the current plans are drafted and approved for 2 years (for example, in 1978 for 1979-1980, in 1979 for 1980-1981). The aspiration for the effective involvement of the main economic units in the formulation of the national economic production program by the sharp increase of the role of the economic contract when drafting the state plan, the use of preliminary delivery contracts, as well as 5-year contracts on the basis of the direct long-term production and economic ties between enterprises, is characteristic.

The concentration of industrial production is typical of all the countries. Much attention is being devoted to the development of standards. The increase of the importance of physical indicators and the increase of the number of centrally planned nomenclatural items of the plan are being observed in the GDR, Romania and the CSSR. In some countries lists of the mandatory assortment of products are being approved, and the supply enterprises cannot refuse to conclude economic contracts. At the same time the consuming enterprises are also not being forgotten. For example, in Romania the validity of the declared needs is rigorously checked. Strict administrative proceedings are instituted against those guilty of overstating the actual need.

In Hungary various forms of wholesale trade in means of production (unfunded selling) have become widespread. The enterprises of wholesale trade in means of production account for up to 40 percent of the total sales volume. Unfunded supply through direct long-term economic ties is also widespread.

Steps are being taken everywhere on increasing the responsibility for the observance of contracts. In particular, in the GDR the duty of informing the consumer in advance about a possible delay of delivery has been placed on the supplier. In case of the violation of this provision the penalties for the disruption of delivery are increased by 25 percent, and the initial amount of the penalty is very appreciable. The consumer can demand the presence of his representative during the shipment of products to his address for the purpose of checking the quality and completeness of the products of the producer. An active campaign is being waged against the granting of reciprocal amnesty. The concealment of the economic harm caused by another enterprise is regarded in the GDR as economic sabotage and is punished severely.

As is known, measures on the improvement of the economic mechanism are also being implemented in the USSR. However, it is impossible not to admit that the methods of the active influence of the consumer on production in the CEMA member countries have still not been completely worked out. The real solution of this problem, in our opinion, depends on the foreign and domestic conditions of the establishment of economic ties between the supply enterprise and the consuming enterprise. Here two basic premises serve as the guideline:

the active participation of the main production units--enterprises and associations--in the drafting of national economic plans, since precisely they are the bearers of specific needs (for products for production engineering purposes) and the producers of specific items for their satisfaction;

the coordination of the interests of the supplier and the consumer on the basis of the preference of the interests of the consumer.

Among the general, from the standpoint of the individual enterprise, external conditions, the observance of which supports economic ties, one should first of all name the increase of the role of 5-year planning. The five-year plan is becoming the main form of planning, the basis of the organization of all the economic activity of enterprises. This is a necessary prerequisite for the development of production, the organization of continuous current planning, direct long-term economic ties and the conclusion of long-term economic contracts.

It also seems expedient to carry out preliminary work and to implement in practice a system of continuous (2-year in our proposal) sliding planning: for the first year to approve the final plan, which has been drawn up with allowance made for the coordinated contractual obligations between enterprises; for the second year to approve the preliminary plan (in the form of detailed figures of the five-year plan for the corresponding year) as the basis for the conclusion of preliminary contracts and for the iterative convergence of the plan and the contract during the period preceding the approval of the final annual plan for the next year.

In conformity with the proposed procedure the contractual relations can be arranged according to the scheme: the 5-year contract (the general parameters of the interrelations)--current contracts (specific) within the limit of 2 years. In this case the introduction in practice of such a tool of economic interrelations as preliminary contracts (precontracts) is proposed.

It is necessary to bring the development of direct long-term economic (more precisely, production economic) ties strictly in line with their economic essence,

which "consists in the organization of such relations between the suppliers and consumers of products, in case of which the drawing up of the production program, which is aimed at the unconditional fulfillment of the assignments of the state plan of the enterprise, takes into account as much as possible the demands and potentials of the parties."²

The concentration of industrial production and the consolidation of enterprises should be regarded as external conditions of economic ties. The creation of production associations, apparently, must not be limited to the framework of the formed departmental structures, since within departmental subordination it is frequently necessary to follow a formal path. But the objectively necessary combining of enterprises may also be formally impracticable due to the fact that they belong to different departments. Apparently, it is necessary not to fit associations to the formed organizational structures, but, on the contrary, to subordinate the latter to the objective process of the concentration of production.

The creation of associations on the principles of the concentration, specialization, cooperation and combination of production (with allowance made for the technological similarity of the production processes, the uniformity of the output being produced, the completeness of the processing of raw materials and so on) will simplify the practical solution of the problem of the active involvement of the main economic units in the drafting of national economic plans.

It is necessary to reorganize significantly the work on the study and determination of the needs for products on the national economic level and to increase the responsibility of the main producing ministries for their substantiation and satisfaction. With the measures on increasing the influence of the consumer of production (and in the end in the interests of such an increase) this will make it possible to restrict the sphere of activity of intermediaries in the person of the all-union main administrations of supply and marketing attached to USSR Gosnab to the organization of economic ties. At the same time the role of the territorial organs of USSR Gosnab should be enhanced.

It is important, finally, to increase steadily the responsibility for the violation of planning and contractual discipline.

An internal condition of the support of economic ties is the observance of the approved list of products for production engineering purposes, which are to be produced and delivered. It is drawn up in conformity with the specialization of the supply enterprise. The producer should also have approved data on the maximum output of critical, advanced and economical types of products, which have been calculated on the basis of the better use of production capacities with allowance made for the improvement of the structure of production (the refusal to produce products which are not in demand; the replacement of items with more advanced ones and so on). In our opinion, it is expedient to include these data in the passport of the enterprise (section 3--"The Production of Products"). It is also possible to supplement the passport of the enterprise with other information which stimulates the disclosure of the internal reserves of the producer (and consumer).

The consuming enterprise, thus, within the limit of the assets allocated for the plan of the second year of the 2-year plan acquires the opportunity to draw up a preliminary order, which is the basis of the precontract. The producer can offer

his own version of the precontract. But in this case economic penalties in favor of the consumer are automatically imposed on him (in the case of attempts to exert pressure on him in order to recover the loss of the impact from the consumer in the case of the forced change of the type and grade size of the items). The consumer retains the right to seek arbitration. If the claims of the consumer are deemed valid, the amount of the penalties are increased by 1.5- to 2-fold. The supplier may also seek arbitration. In the case of the validity of the objections of the supplier the arbitration board revokes the penalties, otherwise they are increased (by 1.5- to 2-fold). The penalties in the amount of the excess can be collected on behalf of the State Budget. Moreover, the arbitration board can make a ruling on the drawing up of a precontract when one of the parties appeals to it. In such a case the question of the effect of the economic penalties at the stage of the drafting of the state plan is examined.

The effectiveness of the stated measures presumes the further improvement of the system of economic penalties as a whole. The assurance of a really appreciable connection of the penalties with the economic stimulation funds of enterprises should be one of the important components of this work. In particular, at first it is possible to establish a direct dependence of the economic stimulation funds on the amount of the paid (received) fines, in case of which a portion of the fines (which is differentiated by sectors) would be paid by means of assets of the economic stimulation funds, while a portion of the received fine would supplement these funds.

The creation of the conditions for the coordination of the interests of the supplier and consumer on the basis of the preference of the interests of the consuming enterprise should be backed by measures which preclude the appearance of unsubstantiated orders of the consumer, including:

the improvement of the standard base of the determination of the needs both by the increase of the scientific soundness of the norms and standards and by the extension of the latter to all production needs;

the tightening up of the monitoring and the increase of the responsibility for the distortion of the data on the real need. Such distortions should be equated with overcharges with all the ensuing consequences;

the implementation of the principle of the organization of economic ties from the final consumers in the sphere of production.

The final contract is concluded on the basis of planning documents which are based on the approved annual plan of the first year of the 2-year plan. This plan is drafted with the participation of the enterprises, while subordinating the interests of production to the interests of consumption.

The proposed approach to the solution of one of the complicated problems of improving the planned management of the economy to a considerable extent presumes the use of the economic contract as a means of the detailed elaboration of the state plan (which is widespread in present-day practice) and a tool of its formulation.

A detailed system of measures on the further improvement of the planned management of the economy and the development of the democratic principles in the sphere of

management is specified in the decree of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality." In it, in particular, it is stated that the drafting of the annual plans of economic and social development is carried out on the basis of the assignments and standards of the five-year plan for the corresponding year and begins from below--from production associations (enterprises) and organizations, which are obligated to specify in the annual plans the list (assortment) of products being produced in accordance with the orders of consumers in conformity with concluded contracts.

It should be acknowledged that when drafting the state plans for 1981 and 1982 the outlined procedure of compiling the annual plans was not fully observed. This can be explained by a number of reasons, and first of all by the late drawing up and approval of the five-year and annual plans, the sluggishness in the work of the staffs of ministries, all-union production associations and so on. The main thing, in our opinion, is that basic questions are being settled without the gradual radical change of the technology of planning. The transformation of the five-year plan into the main form of planning at all levels of economic management is a necessary condition for this, but it also presumes the settlement of the question of the resource backing of production. With the changeover from an annual to a five-year plan the number of material balances and plans of distribution (as applied to the 11th Five-Year Plan) decreases to less than one-sixth for the products list of USSR Gosplan and one twenty-sixth for that of USSR Gossnab. The five-year plans of production of the ministries, all-union production associations, associations and enterprises are represented by considerably more consolidated line items as compared with the annual plan. Now balance sheet calculations for a wide range of line items of the products lists are being made for the solution of the problem of meeting the needs of enterprises for specific types of products in the organs of USSR Gossnab on the basis of the annual plan (the draft of the plan). For example, the Main Administration of Motor Vehicles, Tractors, Agricultural Machines and Spare Parts is drawing up material balances for approximately 1,000 line items, while in fact it is coordinating the resources and needs by the making out of schedule orders with respect to 53,000 descriptions of specialized products. The Main Administration of Machine Building Production is drawing up material balances for 90 line items, while it is making out schedule orders with respect to 16,000 descriptions of specialized products; the Main Administration of Chemical Production--accordingly for 800 lines items and 40,000 descriptions and so on.

As the analysis shows, at present supply and marketing organizations are making a too detailed specification of products. Here the primary aspiration to defend at the level of the organizations of USSR Gossnab the interests of the consumer in the interrelations with the supplier is in effect. However, even with allowance made for the made remark the qualitative characteristics are being maintained in an exemplary manner.

The conclusion is obvious: the existing procedure of drafting the plans of material and technical supply cannot be based only on 5-year planning. Consequently, the search for means of changing this procedure should be accompanied by the study and determination of the degree of influence of the five-year plan on the resource supply of the national economy.'

The most important component in this work is the development of direct long-term economic ties and the conclusion between enterprises (and their intermediaries) of economic contracts for a 5-year period. While sharing this position as a whole, we nevertheless consider it necessary to direct attention to three circumstances. Namely: the current state of the development of direct long-term economic ties needs substantial improvement; direct long-term economic ties objectively cannot be applied to a very wide range of resources; direct long-term economic ties do not guarantee the settlement of some fundamental questions.

The first circumstance, in spite of the existing difficulties, in principle is surmountable. With the other two the situation is more complicated. When establishing direct long-term economic ties for the 10th Five-Year Plan there were excluded from the products for production engineering purposes: export and import deliveries; the amounts of the products being delivered to the market at large, since, as a rule, small wholesale and retail organizations act as the intermediary between the producers and buyers; the deliveries necessary for the formation of the state reserve; the amounts of products intended for the delivery of complete sets of equipment to construction projects and the renovation of operating enterprises (owing to their primarily one-time nature); the one-time deliveries of materials which are used in capital construction; the deliveries of products to small and irregular consumers and so on.³

From the listing it is apparent that although the group of named products in the future may decrease, it will remain significant. Hence, the planning of material and technical supply at least with respect to these products will be based on the system of orders, that is, on the traditional arrangement of supply, which is connected with annual planning.

The resource supply of the national economy on the basis of annual planning not only causes discrepancies of the plans of supply and the plans of production,⁴ but is also the cause of the unsound system of planning "from what has been achieved." Indeed, the determination of the need for products, that is, the guiding line, the goal of progress, is based on the system of orders of enterprises, which are drawn up on the basis of information on the volumes and structure of production of the past period and their own drafts of the plans. The latter by the time of the submitting of the orders have also been oriented toward the achieved level plus some percentage of growth. In other words, the structure of the planned needs reproduces the structure of the past.

It is difficult to overcome the indicated shortcomings also by means of direct long-term economic ties. Given the existing division of labor and the socialization of production any enterprise is at the same time both a supplier and a consumer. Even when direct economic ties exist, it will not be able to give precise orders to the others without knowing the orders being sent to it. In spite of the apparent obviousness, this problem is almost not being discussed on a broad theoretical level. Meanwhile the urgent need for its solution has arisen, to which numerous examples from practice attest.

One of the possible means of solution has already been suggested by us.⁵ Its essence consists in organizing the chain of long-term economic ties, starting from the final consumers in the sphere of production. In the case of the assimilation of new products the system will require additional refinements. In addition to the

usual planning documents, which are the basis for the establishment of economic ties, scientific and technical programs should, apparently, play a decisive role.

Since the chain of economic ties from the majority of suppliers to the final consumers, as a rule, consists of a significant number of links, this would inevitably lead to the lengthening of the already extremely long period of the drafting of annual plans. One of the solutions might consist in the introduction of the following procedure: the delivery contract is concluded for 2 years, and for the second year it is a preliminary contract, since it can be made more precise (within the limits of the conditions stipulated in the contract), while after the lapse of a year it is drawn up as the final contract; at the same time a preliminary contract for the next year is concluded and so on, that is, it is a question of a sliding 2-year plan.

The suggestion on extending the horizon of specific contractual relations does not negate the 5-year economic contracts. Indeed, if we proceed from the idea of the contract which has been elaborated in detail with respect to all directions (the specification of the product, the quality, the delivery date and others), in this sense the 5-year contracts have a very limited sphere of application. Since the 5-year contract, as a rule, consolidates the strategy of the relations between specific enterprises, this is a contract of a special type, which acts as an additional link between the plan and the detailed economic contract (2-year).

We believe that the use of 2-year contracts (precontract--contract) fully accords with the presented set of external and internal conditions of the real increase of the role of consumers in the drafting of state plans. The named tools in their aggregate will make it possible, in our opinion, to better coordinate the planning of production and its backing with resources. The economic contract is becoming a part of the state plan, in which the specific parameters of the production and delivery of products are established in strict conformity with the valid demands of consumers and the real potentials of producers. Thus, in the plan itself the necessary conditions are being incorporated for the assurance of the proportionality of the production and distribution of specific products during its fulfillment.

The use value of a product has a natural and a social measure. The former of them "in part is determined by the quality of the product as a use value, its specific utility, suitability, in part by the quantity."⁶ The degree of the satisfaction of needs serves as the social measure of the use value, since the quantity of the produced use values should conform to "the amounts of the social need which is to be met."⁷

The indicator used widely in our country since 1 January 1978 of the sale of products with allowance made for the meeting of obligations on deliveries (further, the indicator of sales with allowance made for deliveries) in principle is capable of evaluating the use values being produced by the natural and the social measure. The thorough revelation of the merits of this indicator, it seems to us, is possible under the conditions described above.

At the same time the new Instructions on the Procedure of Considering the Fulfillment of the Assignments and Obligations on the Delivery of Products and Goods in Conformity With Concluded Contracts When Evaluating the Activity and Economic Stimulation of Production, Supply and Marketing and Trade Associations, Enterprises

and Organizations⁸ contain positive changes in the indicated direction, which have now been implemented in practice (and this is especially important). These instructions, which were put into effect on 1 January 1982, make a number of important changes: the fulfillment of the assignments and obligations on deliveries of products in conformity with concluded contracts is now taken into account not only in the case of economic stimulation (fund formation, the payment of bonuses), but also when evaluating the results of the economic operations of enterprises and organizations, as well as when tallying the results of the all-union and republic socialist competition; the group of such organizations is being enlarged (the procedure is also being applied to wholesale trade organizations); the maximum percentage of short delivery has been greatly reduced; the conditions of the use of the restored amounts of the material incentive fund (in the case of the making up of the short delivery during a subsequent period) are being made more rigid and so on.

However, it should be emphasized that in spite of the noted positive things of the new instructions, a number of shortcomings of the previous instructions nevertheless have not been overcome.

One of them is the same "gross" approach to the determination of the degree of underfulfillment of the plan on sales with allowance made for deliveries (the adding up of the large short deliveries and short deliveries which are negligible in value), in case of which even a substantial upsetting of the obligations on the deliveries of relatively inexpensive, but exceptionally important products (spare parts and so on) is poorly visible against the background of the total sales volume. The making of the maximum percentage of the short delivery more rigid, which was carried out, only alleviated, but did not eliminate the problem itself. Even if the maximum percentage of the short delivery is decreased to 1 percent (for the average machine building enterprise this is approximately 100,000 rubles a quarter), then the consumer might not receive many types of products, while the supplier will be given a material incentive. Therefore, for the period of the use of the maximum percentage (the experience of recent years convinces us that this is a temporary practice, and in the future a transition will be made to the payment of bonuses only in the case of the 100-percent observance of the obligations on deliveries), in our opinion, at the level of enterprises it is necessary to introduce two additional indicators: the number of unmade deliveries (or deliveries made not in accordance with all the parameters stipulated by the contract) of specific products to a specific consumer; the greatest percentage of the short delivery of specific products to a specific consumer.

The former will reflect the number of consumers who have suffered and the product in critical supply, stimulating their decrease; the latter will serve as a tool of the implementation of the principle of equal responsibility to all consumers. In other words, one indicator is called upon to promote the minimization of the group of consumers who have suffered, while the other is called upon to promote the decrease of the average level of the short delivery of specific items. They should be used along with the indicator of sales with allowance made for deliveries at least in the case of stimulation.

The new instructions also retained the provision, according to which the percentage of the underfulfillment of the plan on sales with allowance made for deliveries is defined for the period under review as the ratio of the value of the underdelivered products in a cumulative total since the beginning of the year to the amount of the

planned sales volume since the beginning of the year. In fact this means that the amount of the short delivery of items, which maintains for the supplier the right to the payment of a bonus, increased by approximately two-, three- and fourfold when moving from the first to the next quarter.

The shortcomings of such a method of settlements are obvious. It weakens the steps which have been taken on the decrease of the maximum percentage of the short delivery; moreover, it serves, in essence, as an additional (along with others) stimulus of the establishment for enterprises of understated plans for the first quarters and the unjustified carrying over of a significant portion of the assignments to the end of the year. For example, the violation by one of the machine building enterprises of several tens of contracts on the delivery of 64 pumps with a total value of 120,600 rubles and of spare parts for them worth 61,000 rubles during the first quarter of 1982 decreased the indicators of sales with allowance made for deliveries by more than 2 percent of the quarterly plan of the sale of products in the amount of 9 million rubles, while during the fourth quarter this would have come to slightly more than 0.5 percent of the annual plan of the sales of products in the amount of 36 million rubles. The amount of the bonuses of the workers of the enterprise for the same short delivery of items decreases respectively by 100 and 50 percent.

In such a situation the supply enterprise exerts considerable efforts to attribute already in the plan to the last quarter all the difficult and "unprofitable" orders (especially on the production of new equipment), but if it does not work out, having run into difficulties during the fulfillment of the plan, it will do everything to postpone the date of the fulfillment of the contractual obligations. Of course, this affects the smoothness of production and the results of the fulfillment of the state plan.

Such a procedure of the calculation of the degree of underfulfillment of the plan on sales with allowance made for deliveries, in case of which the value of the underdelivered products in a cumulative total since the beginning of the year would be attributed to the amount of the planned sales value during the period under review, that is, in a noncumulative total, seems more preferable to us.

We should also indicate the inadequate elaboration of some other provisions of the new instructions, which allow, in particular, the possibility of the occurrence of a discrepancy between the amounts of the reduction of the bonuses of workers and the decrease of the material incentive fund in connection with the underfulfillment of the assignments and obligations on deliveries. This is evident if only from the fact that the decrease of the incentive fund for the identical amount of the short delivery does not depend on what quarter it is, while the payment of the bonuses does depend on it.

In recent times the practice of the release of finished products by the client himself from the grounds of the producing enterprise has become more and more widespread. In the case of such a procedure the supplier in the case of the untimely selection of products by the consignee does not bear any responsibility, including material responsibility, for their short delivery (in accordance with the instructions). Thereby the effectiveness of the use of the indicator of sales with allowance made for deliveries decreases appreciably.

In addition to the stated problems there are also other unsolved problems. Thus, it is necessary to improve the system of fines (forfeits), which is used at the stage of the implementation of the plans, to increase the economic interest and responsibility of those economic units, on the activity of which the results of the work of enterprises depend, to improve the organizational structure of management and so on.

As we see, the problem in question requires a comprehensive solution, a collective search and the unity of theoretical research and practical work.

FOOTNOTES

1. "Materialy XXVI s"yezda KPSS" [Materials of the 26th CPSU Congress], Moscow, Politizdat, 1981, p 50.
2. "Nauchnyye osnovy i praktika khozyaystvennogo rascheta" [The Scientific Principles and Practice of Cost Accounting], Moscow, "Ekonomika", 1974, p 82.
3. See A. I. Selivanov and A. Kh. Sadreyeva, "Pryamyie dlitel'nyye khozyaystvennyye svyazi" [Direct Long-Term Economic Ties], Moscow, "Ekonomika", 1981, p 72.
4. The entire cycle of the drafting of the plans of material and technical supply: the determination of the need, the preliminary distribution of resources with the delivery of assets to the consumers, the specification of the funds, the making up of schedule orders, should be completed for the most part by the middle of November of the year preceding the year being planned. By the time of the approval of the plans of production for the overwhelming portion of the resources the consumers have already been attached to suppliers, the assort-mental load of the capacities has been determined and so on. The process of drawing up the plans of production takes its own course, and the approved plan often deviates from the draft. The reissuing of schedule orders, the increase of the shortage of specific items and others are the consequence of this.
5. See PLANOVOYE KHOZYAYSTVO, No 1, 1980, p 78.
6. K. Marx and F. Engels, "Soch." [Works], Vol 46, Part I, p 381.
7. Ibid., Vol 25, Part I, p 205.
8. See EKONOMICHESKAYA GAZETA, No 44, 1981, pp 15-16.

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INVESTMENT, PRICES, BUDGET AND FINANCE

DEVELOPMENT OF UNION REPUBLICS, BUDGETS REPORTED

Moscow FINANSY SSSR in Russian No 8, Aug 82 pp 8-13

[Article by V. G. Panskoy, candidate of economic sciences: "Union Republic Development and Budgets"]

[Text] The peoples of our multinational homeland, closely united around the native Communist Party, in a situation of high political and labor enthusiasm, are awaiting a glorious anniversary--the 60th anniversary of the founding of the USSR. The country's workers, implementing the decisions of the 26th CPSU Congress, have developed competition for fulfillment and overfulfillment of the assignments of the 11th Five-Year Plan and the attainment of new goals in communist construction.

The results of the tasks of the 11th Five-Year Plan, whose plans are concretized in the decisions of the November (1981) Plenum of the CPSU Central Committee and the sixth session of the USSR Supreme Soviet, tenth Convocation, also determines the peculiarity of current international relations within the country and opens up the space for intensive rapprochement of nations. Strengthening of the interconnections among the republics and expansion of the material base of the friendship of peoples are based on further improvement of the unified national economic complex, intensification of the economy, furtherance of scientific and technical progress, the development and implementation of the Food Program and efficient distribution of productive forces.

The implementation of the party's socio-economic program and the plans of the 11th Five-Year Plan are steadily multiplying the economic might and spiritual wealth of the populations of all the union republics. Each republic, while increasing its contribution to the material and spiritual treasury of the USSR, is simultaneously increasing the possibilities of its own flourishing. The Soviet Union is developing as a unified and whole organism and is becoming a mighty citadel of friendship and fraternity of nations. "Our course is to increase the material and spiritual potential of each republic and to use this maximally for the harmonious development of the entire country," said L. I. Brezhnev. "We have made truly historic achievements along this path."*

*"Materialy XXVI s"yezda KPSS" [Materials of the 26th CPSU Congress], Moscow, 1981, p. 55.

As was emphasized in the decree of the CPSU Central Committee, "On the 60th Anniversary of the Founding of the Union of Soviet Socialist Republics": "The past sixty years have been marked by the headlong socio-economic development of the Soviet Union. During this period national income has increased many times over. The proportion of the USSR in world industrial production has increased some 1 percent in 1922 to 20 percent at the present time."

The Leninist national policy of the CPSU, which is directed toward planned development and equalization of the levels of the economy and culture of all the sister republics, has led to the rapid flourishing of the national economy, science and art, education and public health, and to an unprecedented rise in the material and cultural level of the life of the population of the union republics. Relying on the international friendships of the peoples of the USSR and successes in the development of the country's economy, the 26th Party Congress earmarked an immense program for further development of the national economy, setting as the major task of the current Five-Year Plan improved well-being of the Soviet people. It stipulates the scope and rates of comprehensive economic and social development of each union republic and also equalization of the levels of their economies. The most rapid growth of industrial production is intended for the Belorussia, Uzbek, Georgian, Azerbaijan and Armenian SSR's. The production of industrial output in the country as a whole is to increase by 26 percent, and in Belorussia--by 28 percent, Azerbaijan and Uzbekistan--by 30 percent, and Armenia and Georgia--31 percent. In the eastern regions of the RSFSR there will be accelerated rates of development of the petrochemical, gas, coal, pulp and paper and several other branches of industry.

The formation of the larger territorial production complexes will continue: the Western Siberian, the Kansk-Achinsk, the Sayano-Shushensk, Southern Yakutsk, Pavlodar-Ekibastuz and the Southern Tajik. In the republics of Central Asia, which have large labor resources, it is intended to create labor-intensive enterprises and productions in machine building and light industry. The energy pace of the union republics will be strengthened and expanded because of the construction of atomic electric power stations and the assimilation of hydroelectric energy resources. In the RSFSR, and the Ukrainian, Kazakh and Tajik SSR's and other republics it is planned to further develop ferrous and nonferrous metalurgy. Machine building will develop at rapid rates.

During 1981-1985 it is intended to appreciably increase the production and improve the quality of consumer goods in all the union republics. Special importance will be attached to expanding the assortment of products of local industry; the volume of their output will increase almost 1.4-fold. The 11th Five-Year Plan will be an important stage in the further advancement of agriculture of the union republics.

One of the leading roles in the development of the economy of the USSR and the republics that comprise it will be played by the financial system, mainly the state budgets, whose essence and significance, like that of the entire system of finances, are determined by economic relations under socialism.

The USSR State Budget, which distributes and redistributes about two-thirds of the State's financial resources, plays a most important role in satisfying the needs for the country's economic and social development. The budget makes it possible to concentrate funds in the main areas of the economy and successfully carry out the immediate tasks facing it for accelerated development of the branches of industry, expansion of the material and technical base, advancement of agriculture, raising the standard of living of the Soviet people and strengthening the country's defense capabilities. With the help of the budget the state follows a policy of priority development of branches that determine technical progress, carries out interbranch redistribution of financial resources, providing them for the new and progressive branches, invests immense amounts of money in more intensive development of economic regions and raw material resources, and contributes to increasing the effectiveness of public production.

The USSR State Budget is annually approved by the USSR Supreme Soviet as a unified legislative act. This makes it possible to centralize natural resources, using them in keeping with the plans for economic and social development and to deposit part of the funds from the union budget into the budgets of the union republics in order to implement the Leninist national policy, equalize the levels of economic development of the republics and regions and, on the basis of this, achieve economically substantiated proportions in the distribution of the national income and the location of productive forces in the country.

In all stages of socialist construction the USSR State Budget has provided the necessary financial resources for measures for developing the economy and culture, improving national well-being and strengthening the country's defense capabilities. The increasing role of the budget in socialist reproduction is shown by its increased proportion in the overall volume of state financial resources: under the 9th Five-Year Plan --65 percent, and the 10th--65.9 percent. During this period the volume of the budget increased almost 1.4-fold.

The state budget plays a special role in implementing the Leninist national policy. The right of each republic to have its own budget gives it the possibility of displaying truly state-administrative, economic and cultural independence. Additionally, the budgets of all the union republics comprise the USSR State Budget, which fully corresponds to the principles of a multinational state as a voluntary association of republics with equal rights.

The budgets of the union republics organically include 51,222 local budgets, including 146 kray, oblast and city budgets of republic jurisdiction, 4,060 budgets of autonomous oblasts and okrugs, of rayons and cities of kray, oblast and okrug jurisdictions, 47,016 rural and village budgets and budgets of cities of rayon jurisdiction and city rayons. This makes it possible to fully finance measures included in plans for the economic and social development of the union republics and provides for their participation in the implementation of measures of unionwide significance.

The declaration of the founding of the USSR proclaims that the Soviet Union is called upon to provide for internal security and steady development of the unionwide economy and to render constant assistance to the union republics. The union budget is established as part of the USSR State Budget for this. From it

we finance expenditures on defense and the development of the unionwide economy and the state's foreign economic ties. Funds from the union budgets are used for the creation in the union republics of large fuel and energy complexes, industrial associations and enterprises, sovkhozes and kolkhozes, railroads, seaports and other facilities of unionwide significance. The union budget is used to render assistance to republic and local budgets and also branches of the national economies of the union republics for repaying credits, augmenting circulating capital, measures for avoiding natural disasters and eliminating their consequences, and measures for covering additional expenditures for the payment of differences in prices for livestock, poultry, rabbits, milk and other kinds of agricultural products because of their increased procurement prices without changes in their retail prices.

The budgets of the union republic are very important in the distribution and redistribution of the country's national income as well as the accumulation of the state's financial resources. Their volumes are steadily increasing (Table 1).

Table 1

Five-Year Plan	USSR State Budget, billions of rubles	Including			
		Union Budget		State Budgets of Union Republics	
		Billions of Rubles	Proportion of State Budget	Billions of Rubles	Proportion of State Budget
Fourth	186.6	144.2	77.3	42.3	22.7
Fifth	251.1	194.1	77.3	57.0	22.7
Sixth	324.9	162.8	50.1	162.1	49.9
Seventh	439.3	182.8	41.6	256.5	58.4
Eighth	642.5	330.8	51.5	311.7	48.5
Ninth	933.2	482.0	51.7	451.2	48.3
Tenth	1300.7	680.3	52.3	620.4	47.7

There is an increase not only in the absolute sums of the budgets of the union republics, but also in their proportion of the USSR state budget. This means that the republics have more responsibility for implementing the budget, for prompt and complete mobilization of all income sources, and for economical and thrifty expenditure of funds.

Analysis shows that the increased volumes of the union republics' budgets are largely a result of the rapid development of the economy, and also increased profitability and accumulations in its branches. The main source of the budget of a union republic is resources of the socialist national economy.

The most important aspects of the growth of financial resources of the union republics are increased monetary accumulations of the enterprises and organizations; payments from profit and turnover tax now comprise the most important part of the incomes of their budgets (Table 2).

Table 2

Year	Turnover Tax, Payments from Profit into Republic Budgets billions of rubles	Proportion in Incomes of Republic Budgets
1940	1.9	43.5
1950	4.5	45.7
1960	23.3	61.0
1970	46.5	66.9
1980	89.8	67.3
1982 (plan)	91.8	67.9

The figures that are given show the important positive changes that have taken place in the economies of the union republics and in the structures of the incomes of their budgets. Under these conditions the budget has a more active influence on the fulfillment of the plan for economic and social development of the republics as well as improvement of their balance and the intercoordination of their indicators. At the same time there is a greater dependency of the fulfillment of the income part of the budgets on increased effectiveness of production, labor productivity, the introduction of the achievements of science and technology into the national economy, improvement of administration, mobilization of internal reserves, and strengthening of the conditions for economical and thrifty expenditure of state funds.

Additionally, the rapid development of the budgets of the union republics is related to the consistent implementation of the Leninist national policy of the CPSU and the Soviet state, according to which, in order to eliminate the disparities in the levels of the economies of the republics, large allocations are always allotted from the union budget, deductions from unionwide state incomes and taxes for republic budgets are increased, and their budget rights are expanded. This has undoubtedly increased the role of the budgets of the republic in the accumulation and allocation of the many billions of rubles for the development of the economy and the higher standard of union of the workers of the union republics.

Strengthening the income base of the budgets of the union republics because of the growth of their economies has made it possible to reduce subsidies from the union budget from year to year. Further expansion of budget rights and strengthening of the material and financial base of the local soviets, especially rayon, city, rural and village soviets, has also contributed to reducing the number of budget subsidies and the amounts of the subsidies they obtain. During the past ten years alone (1970-1980) the overall sum of subsidies to local budgets has dropped to about one-third the previous level: from 759 million rubles to 272 million rubles. In 1970 2,356 local budgets received subsidies, or 4.7 percent of the overall number of them, and in 1981 the number of subsidized budgets dropped to 225 (0.4 percent).

The considerable upsurge of the economies of the union republic and the expansion of their rights have sharply changed the volume and structure of the expenditures of their budgets. Today the proportion of expenditures on development of the national economy is great. In 1980 51.6 percent of all the expenditures from the budgets of union republics were used for these purposes as compared to 20.3 percent in 1940. Here are the dynamics for the various years (Table 3).

Table 3

	1940	1950	1960	1970	1980
Total, billions of rubles	0.9	2.3	13.8	35.1	70.7
Proportion of overall sum of expenditures	20.3	23.6	55.3	47.4	51.6

Expenditures from the budgets of union republics for the national economy increased during this period more than 78-fold. But attention is drawn to the marked increase of their proportion in 1960 as compared to 1950 and its relative reduction in 1970. The fact is that from 1958 through 1965 there were national economic councils in operation which were directly under the jurisdiction of the councils of ministers of the union republics and were financed from their budgets.

Branches related to the republic and local economies are now financed from the budgets of the union republics. These include, in particular, light industry, the food, meat and dairy and fuel industries, local industry, the production of construction materials, and a considerable proportion of expenditures on ferrous metallurgy, the coal industry, the petroleum processing industry, the timber and wood processing industry, the construction industry, housing and municipal services, communications, transportation, trade and municipal services for the population as well as most of the expenditures on agriculture.

The allotment of large amounts of money from the budgets of the union republics for the development of their national economies has made it possible to carry out in a short period of time a task set by the Party during the first years of the formation of the USSR: eliminating essential disproportions in the economic structures of national and central regions and achieving rapid growth of the productive forces of the backward areas, providing for uniform development of socialist production relations throughout the entire territory of the country.

The tsarist government artificially retarded the development of productive forces in the remote areas, thus transforming them into agrarian raw material appendages of Russia. In Central Asia and Transcaucasia, for example, there was practically no industrial production at all. With the formation of the USSR the Party and government unwaveringly rendered material and financial assistance to the national republics. They sent highly skilled industrial personnel there. The industrial development of the formerly backward areas preceded more rapidly than that of the central regions of the country. While in 1928-1940 the average annual rates of growth of industrial production in the USSR as a whole were equal to 16.8 percent, in Kazakhstan they were 19.2 percent, Tajikistan--21.4 percent, and Kirghizia--19.7 percent. For purposes of industrialization in the union republics they sought out internal sources of accumulations for the socialist economies and allotted large funds from the budgets. Based on the national economic plan, individual republics were given budget allocations that much exceeded their internal financial capabilities.

As a result it became possible to create large-scale industrial production in all the union republics and to utilize the raw material and fuel and energy sources located on their territory comprehensively, that is, it became possible to have comprehensive development of the national economy and continuous improvement of the public production of the republics. From 1913 through 1980 the volume of industrial output increased 366-fold in Kirghizia, 250-fold in Kazakhstan, 390-fold in Armenia and 296-fold in Moldavia. Agriculture, transportation, communications and housing and municipal construction are also developing at rapid rates in the union republics. Socialist culture has flourished in all the union republics of the Soviet multinational state and considerable successes have been achieved in public education, public health, science, social security and social insurance. The USSR State Budget and the budgets of the union republics have served and still do serve as an active instrument for the completion and comprehensive expansion of one of the greatest conquests of the peoples of the USSR--the cultural revolution. More than 60 percent of all the budget allocations for social and cultural measures are financed from the budgets of the union republics. The money allotted for these purposes increases from year to year and recently has reached almost half of all the expenditures of the budgets of the union republics. Here are the figures (Table 4):

Table 4

Expenditures	1940	1950	1960	1970	1980
For social and cultural measures--total	2.8	6.3	17.4	36.8	62.2
Including for:					
public education,					
science and culture	1.7	3.7	8.1	16.2	26.0
public health	0.8	1.9	4.1	8.7	13.9
social security	0.3	0.7	4.7	11.4	21.9

During forty years these expenditures increased more than 22-fold; including for public education, science and culture--15-fold, public health--17-fold and social security--73-fold. Of the overall sum of allocations from the budgets of the union republics for social and cultural measures, more than 40 percent were used for education, more than 20 percent for public health and approximately 35 percent for social security.

Because of the unwavering concern of the Party and government, in the shortest possible period of time the union republics have eliminated backwardness in culture and there has been an equalization of the cultural level of all peoples who populate our multinational homeland.

Before the revolution almost three-fourths of the residents of Russia and practically all of the indigenous population in the surrounding areas were illiterate. In Kirghizia, for example, there was no literacy. In 1914 there were 107 schools on its territory where 7,041 people studied and only 574 of them were Kirghiz, mainly children of tsarist bureaucrats, merchants and rich landowners. Of course there were neither tekhnikum nor VUZ's. During the 1980/1981 school year there were 1,700 schools in Soviet Kirghizia with 0.9 million students.

Today the former national outskirts of tsarist Russia have become not only republics with complete literacy, but also centers for training highly qualified specialists for the national economy with an extensive network of higher, secondary specialized and vocational educational institutions.

Before the revolution in Armenia, Azerbaijan, Belorussia, Kazakhstan, Moldavia and Central Asia there was not a single VUZ. Now in the thirteen VUZ's of Armenia there are 58,100 students, in the seventeen in Azerbaijan--107,000 students, in the thirty-two in Belorussia--177,000 students, in the eight in Moldavia--51,300 students, in the fifty-five in Kazakhstan--260,000 students, and in the seventy VUZ's of the republics of Central Asia--426,100 students.

Public health and sanitary-epidemiological measures and the organization of generally available free medical assistance to the population has helped to appreciably prolong the overall life span, thus increasing the productive forces of each republic. Large and ever increasing amounts of money are allotted from the budgets of the union republics for the development of public health. Expenditures on public health are increasing especially rapidly in previously backward national outskirts of tsarist Russia. During the past forty years expenditures on public health from the budgets of the union republics increased in Kazakhstan--30-fold, Kirghizia--31-fold, Tajikistan--23-fold, Armenia--24-fold and Uzbekistan--28-fold. This made it possible to create a powerful material base for public health in each republic and to train numerous medical workers with higher and secondary qualifications.

The 60-year history of the USSR is clear evidence that, along with the overall development of the economy and culture of the socialist society, there has been a process of equalization of the levels of development of the union republics. The union budget and the budgets of the union republics have played and still play an extremely important role in this process.

In keeping with the decisions of the 26th CPSU Congress, under the 11th Five-Year Plan it will be necessary to mobilize large material and financial resources for implementing the measures that have been earmarked for the country's social and economic developments. The overall volume of state financial resources will increase by 20 percent as compared to the 10th Five-Year Plan and will exceed 2.4 trillion rubles. This presupposes further growth of the leading area of socialist finances--the USSR state budget and its constituent part, the budgets of the union republics.

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REGIONAL DEVELOPMENT

INTEGRATED UTILIZATION OF RESOURCES, LONG-TERM PROGRAMS FOR REGIONAL DEVELOPMENT

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[Article by A. A. Vertman, V. I. Danilov-Danil'yan, and A. A. Rybkin: "Comprehensive Utilization of Resources and Long-Term Plans for the Development of Regions"]

[Text] 1. Introduction

When questions of improving the results of public production are considered one of the key concepts is comprehensiveness. There is hardly any need to convince anybody of the importance of comprehensiveness in processing raw material or the advantages of comprehensive technologies, that is, those that join previously separate stages of the production process into a technological and not an organizational-economic system. Among the most crucial problems to whose solution comprehensiveness should contribute in the aforementioned aspects are reduction of the negative consequences of economic activities on the natural environment, reduction of the proportion of heavy, unskilled labor, reducing the load on transportation, reducing the economic chains whose many links "alienate" the consumer of products from the producers and thus do not contribute to improving their quality.

Comprehensiveness of production is a factor which should stimulate the acceleration of scientific and technical progress and positive strides in the reproduction structure of the economy. In the sphere of administration comprehensive special-purpose programs are envisioned as the most effective form of planned influence on the development of the economy in the long term. Finally, the task of comprehensive development of regions integrates all of the aforementioned and many other aspects of economic activity.

Any comprehensive solution in production involves diversification processes in one form or another--increased diversity of output or expansion of the list of intermediate products or technologies that are applied. For this reason (not the only one, but perhaps the one that accumulates the effect of the rest) these solutions more than others require agreement, planned interaction, coordination and so forth, and, consequently, their implementation depends to a maximum degree on surmounting "internal friction" in the organizational structure of administration. A comprehensive solution which from the national economic point of view would seem to be undoubtedly expedient, frequently turns out to be an indicator that conceals a lack of coordination of the interests of local units among themselves or with the interests of the economy as a whole.

A serious impediment to the implementation of comprehensive solutions is the division of the products of each specific economic unit into profile and nonprofile. This is not, of course, a matter of names, but of the fact that they represent certain planning procedures, methods of organizing economic incentives and forms of functioning of the economic mechanisms that are derived from the branch system of administration of the economy. The existing structure of the administration of the economy does not properly contribute to adopting solutions whose effect extends beyond the framework of the branch. But no large-scale decision can be implemented in any other way than through the system of branch administrative agencies. Therefore plans that do not have significant support from these agencies receive less real priorities and sometimes even despite the most energetic measures of directive intervention.

How does one break this cycle and open up the road to the most advanced technology? From our standpoint there can hardly be any improvement as a result of the organizational and structural methods that are now being suggested and discussed by many economists, specialists in administrative theory, and business practitioners. For example, to change the emphasis from the branch principle of administration to the regional one only modifies the problem, but does not solve it. The essence of the matter lies not in a sharp a priori change in the structure of administration, but in the creation of material prerequisites which accelerate the process of formation of conditions for organizational and structural changes. The new should show through the center of the old, and find there a support and source of future development (as is the case, for example, in the modern agro-industrial complex).

The socialist system of management provides powerful means of influencing public production, but the number of actually realized decisions is limited by objective conditions, and the implementation of measures does not always lead precisely to the result for which they were undertaken. The majority of proposals for restructuring the administration of the national economy are based on the leading function of organizational measures, after which one should transform the technological and social policy. Regardless of how enticing means of solving economic problems on the basis of organizational restructuring may be, in our opinion, there is no other way of surmounting difficulties than daily, painstaking work which presupposes constant interest in specific technological alternatives.

Especially significant for the long-term development of the national economy are large-scale technological decisions which correspond both to the nature of our social relations and to the specific features of those natural resources which the country has. The development of this type of decision, along with branch and interbranch decisions, increases the number of regional and sometimes interregional problems. Thus one sees once again the persistent need to improve the combination of the branch and regional aspects of administration, which has been repeatedly emphasized in the decisions of CPSU Congresses and other Party and government decrees. The coordination of these aspects will obviously have to be improved under the conditions of the administrative structure which is based on the branch principle.

It is probable that today we are unaware of organizational forms of planning and administration and contours of the economic mechanism which would solve the problem fully, and we must find them. Under such conditions it becomes especially important

to have long-term regional programs and to give them priority in order to actively motivate the branches to implement them. The program-special purpose principle would help to take into account both the interests of the country as a whole and the specific features of a concrete region, its capabilities and expedient directions for its development. Social, administrative and cultural transformations can thus proceed within the framework of the earmarked general regional tasks, which will give them the necessary concreteness and free them from the selection of extremely general reference points which are remote from the requirements of life.

The collective of specialists that develops such a program will have to consider also the question of where "unconditional" inclusion of a region in the national economy ends and its independence begins. It would seem that it is possible to reach this compromise by providing for coordination of the ideas of the region, on the one hand, as a totality of branches that "run through" it and, on the other, as an element participating in interregional interactions.* This schema could turn out to be extremely useful for analyzing a number of economic problems, but one cannot hope that it will make it possible to understand the internal development of the region and become a basis for the creation of a ramified long-term program. This schema can be used for such purposes only after the significant tasks of development are resolved independently of it. Otherwise one cannot provide for fulfillment of a most important, but quite obvious condition: on this basis long-term planning must be thoroughly concrete.

The problematic of the development and implementation of comprehensive regional special-purpose programs is closely related to a group of issues that arise with the formation and construction of territorial-production complexes (TPK). It is not by accident that the term "program special-purpose TPK" is used, and it apparently requires no special commentary (see, for example, [57]. Our purposes do not include refining the definitions of the terms "comprehensive special-purpose program" (see, in particular, [6, 77), "territorial-production complex" (the corresponding issues are discussed in [57) and certainly not the classification of special-purpose programs or TPK's; however it will subsequently be very important to remember the division of regions into inhabited (that is, having a sufficient number and also a stable population which forms a unified economic system and the infrastructure that corresponds to it) and uninhabited.

Questions of the formation of the strategy for assimilating uninhabited regions are considered in [87]. This article will study a principally different problem: we shall try to apply the same productive approach to the selection of base technologies for long inhabited localities, keeping in mind the 20-30 year horizon for the implementation of the program. Of course it would be naive to assume that solutions exist in the area of base technologies which are separate from the economy just as it would be to orient oneself toward purely economical approaches to technological problems. But for a synthesis of these aspects there can be no single formula for all cases of economic practice, and an accounting for the specific concrete situations usually reveals new facets of the problem in its general statement.

*This approach is realized most clearly in research on the construction of models of optimal long-range planning of the national economy; despite the essential differences in a number of other aspects, in this respect many models and systems of models are based on common principles (particularly [1-47 and others).

The presently prevailing point of view, according to which the priority development of the eastern regions of the country should be accompanied by a tendency toward concentration in them of significant labor resources and most of the increase in capital investments, points out only the overall tendency whose realization not only allows, but also presupposes a different type of individual solution. The assimilation of a new region produces an appreciable national economic result only when the total labor productivity achieved in it (of course, on the basis of increased capital and energy availability) is significantly higher than when similar products are produced in inhabited regions (although, for noneconomic regions, this assimilation can be undertaken without meeting this condition).

Thus the assimilation of new regions should be accompanied by increased labor productivity on the scale of the entire national economy, that is, in the final analysis it should lead to a release of labor resources in other regions. Otherwise it is expedient to make capital investments in the economies of already assimilated territories. In both cases the tasks related to intensive development of inhabited localities, where significant labor and natural resources are concentrated, especially those which are distinguished by favorable climatic conditions, become especially important in the comprehensive strategy for the development of the country's national economy.

Similar to the way that any regional special-purpose comprehensive program cannot be realized today without addressing the system of branch administrative agencies, the construction and functioning of the corresponding complex and its individual enterprises cannot be achieved in an inhabited region without close interaction with its economy, without utilization of its infrastructure, and without active enlistment of local population. Moreover, only such a regional program is capable of laying a basis for the economic system which has a potential for further stable development and which corresponds to the future interests of the population of the region, contributes to further progressive tendencies in the changes of the reproduction structure of its economy and provides for its full participation in interregional division of labor.

2. Several Problem of Branch Development When Selecting Regional Programs

Problems of regional development must be considered in the context of the overall national economic situation, not only in the territorial, but also in the branch aspect. This is conditioned by the importance of orienting regional programs toward comprehensive utilization of local resources, which are reproduced or nonreproduced, but exist in extremely significant quantities. Only in such a case can one insure the necessary potential for further development of the economic complex that is created. It becomes especially important to have regional programs whose implementation should contribute to eliminating bottlenecks in the development of the national economy as a whole or on a local scale. This pertains primarily to the shortage of energy, metal, metal structures, the inadequate capacities of construction organizations and the difficulties in providing construction material. It happens most often that these problems are interconnected. Consequently, when forming regional special-purpose programs one must search out schemes for making industries comprehensive which will make it possible to reduce the tension in the aforementioned aspects as much as possible and solve the corresponding problems by enlisting local resources.

It is possible to accelerate construction and reduce the labor-intensiveness of construction work only by extensively introducing light reinforced structures and changing over to plant manufacture of the main finishing elements, leaving only the installation of these elements at the site and precluding the so-called "wet" finishing work. To carry out this task it is necessary to considerably increase the output of structures made of aluminum alloys. Today this production is extremely energy-intensive (for one ton of aluminum one uses nine tons of conventional fuel, including up to 22 thousand kilowatt-hours of electric power [9]). When the cost of aluminum structures is 3-4 times higher than the others: the present technology for producing aluminum requires high-quality raw material.

The difficulties in the development of ferrous metalurgy--the most important branch of the USSR national economy which prevails in the production of construction materials--are now being extensively discussed on the pages of economic literature and particularly in [8] which we touched upon. The effectiveness of the production of ferrous metals is decreased because of factors which are determined both by the condition of the raw material base and by technological processes (some of which are obsolete) as well as the imperfect assortment of products that are produced.

It is important to emphasize that the application of many technologies that are basic for the economies of developed capitalist countries now or in the near future will fail to provide a radical solution to the large-scale tasks facing the Soviet economy. It is necessary to change over to principally new technologies that correspond to our resource capabilities and socio-economic conditions. They must provide for comprehensive processing of the natural raw material that is available and fairly widespread in the USSR, relatively low labor-intensiveness of production and a high degree of ecological safety.

While retaining the tendency toward slow updating of fixed capital in ferrous metalurgy and the accumulation of outdated equipment, complete expenditures of energy on the production of rolled metal from ferrous metals can be, however paradoxical it may seem, comparable with the corresponding expenditures on the production of rolled aluminum. Moreover, the resistance of aluminum structures to atmospheric corrosion is quite high while losses of ferrous metals under the influence of this factor amounts to no less than 10 percent a year [10]. Light structures make it possible to reduce the overall weight of the buildings 4-5-fold, to reduce labor expenditures on manufacturing wall structures 10-30-fold and labor expenditures on the manufacture of bearing parts--1.5-fold [10].

Long-term program solutions that are oriented toward accounting for existing conditions are also necessary in power engineering, and regional factors are especially great here. The overall supplies of energy resources in our country are extremely great, especially taking into account the nontraditional sources of energy (the energy of the tides, sun and wind), nonstandard deposits of combustibles (bituminous shale), and also the extra supplies of rock and brown coal, combustible shale, and gas (several aspects of the long-term development of the fuel and energy complex are considered in [11]). When drawing up long-term programs for regional development it is very important to pay attention to the fact that, in addition to the development of production of energy, new technological decisions in energy consuming branches also assume exceptional significance.

The extremely rapid development of atomic energy is perhaps the most serious stimulus to the rearrangement of the structure of energy consumption in the near future. In order to insure efficiency of the utilization of the AES one needs consumers of concentrated flows of energy [12]. It would seem that this role could be filled by nonferrous metalurgy, whose proportion of the consumption of energy by industry is extremely high (for example, in Japan it reaches 32.5 percent [13, pp 2-3]), and, moreover, this branch consumes one of the kinds of fuel that are in short supply --coking coal. But the existing technology for the production of ferrous metals has a number of peculiarities which determine the specific features of energy consumption, so that with a more concrete analysis the situation no longer seems so obvious. Although the supplies of coking coal are significant, increased extraction of this kind of energy raw material is complicated by the small reserve for increasing labor productivity and the shortage of labor resources, which is being felt most critically in underground work.

Along with metalurgy and power engineering, agriculture plays a most important role in solving problems of regional economic development. The great bioclimatic potential of the large part of the land that is suitable for agricultural utilization has been changed increasing more actively in recent years by other factors that have a negative influence on the production of agricultural products. Among them is the withdrawal of land as a result of the development of the mining industry, particularly in one of the most productive regions--the Central Chernozem zone. The continuing migration of able-bodied people from the country to the city is not compensated for by the necessary increase in labor productivity in agriculture. Extremely large capital investments are being allotted for the development of this branch--even now 27 percent of all the investments are being allotted for these purposes ["Materialy XXVI s"yezda KPSS" /Materials of the 26th CPSU Congress/, Moscow, Politizdat, 1981, pp 32, 34], and in the future this indicator will rise in keeping with the Food Program adopted by the May (1982) Plenum of the CPSU Central Committee. But these funds are not always utilized as efficiently as possible. The area of irrigation farming should be significantly expanded and it is necessary to accelerate the construction of mechanized hothouses as well as to improve the infrastructure. The solutions to these problems involves increasing the production of iron pipe, light construction elements for hothouses and storehouses, cement and road material made of local raw material and byproducts. It is also necessary to utilize secondary thermal resources of enterprises, to introduce technologies for storing agricultural products in special containers, and so forth.

Even from this short list it is clear that intensification of agricultural production involves the solutions to problems related to the development of ferrous and nonferrous metalurgy, power engineering and construction. Here we need new technological decisions, since it is impossible to satisfy the corresponding demands on the basis of further reproduction of technologies that are being used. For example, expansion of the area of irrigated land involves the need to sharply increase the production of iron pipe for irrigation (the same pipes, which are distinguished by a high resistance to erosion, are required for the development of the production of biomass in phytotrons). But iron is a product that is in short supply, and it is less advantageous for ferrous metalurgy to produce it. The fact is that when it is melted the productivity of the blast furnaces decreases by no less than one-fourth and the expenditure of coke increases [14]. Therefore it is hardly realistic to speak about a large-scale increase in the output of cast iron for satisfying the needs of irrigation construction. This problem can be

solved only by developing new metallurgical processes which make it possible to expand the smelting of cast iron without overloading existing capacities of ferrous metalurgy, on the basis of coke-free processes that do not involve blast furnaces.

The search for comprehensive technological solutions should be the basis for the formation of regional special-purpose programs that are directed toward solving the problems that were briefly described above. The orientation of these programs toward local resources should simultaneously lead to a significant reduction of the load on transportation, a considerable proportion of whose handling capacity is utilized for shipping metallurgical and energy raw material as well as construction materials. In the next section we shall make suggestions that are to a certain degree hypothetical regarding the possibilities of applying certain technological schemata for such programs. Each of them requires, of course, further planning and economic development, coordination with specific regional conditions, and detailization, in which it would be expedient to rely on methods of special-purpose programming and models of territorial production planning, above all set and combination of funds.

3. Accounting for Regional Peculiarities When Selecting Base Technologies of Special-Purpose Programs

It is impossible to analyze the specific features of all inhabited regions of our country in a magazine article, and therefore we shall limit ourselves to two examples--the Transcaucasion and Central Asian regions. Of course, we do not claim to make an exhaustive study even in these cases, and shall only use them as clear examples of aspects that interest us of branch and territorial interaction, and the formation of long-term regional special-purpose programs that are oriented toward the creation of production systems for comprehensive utilization of local resources.

An important feature of the regions under consideration is the sufficient (for the Transcaucasian area) and high (for the Central Asian area) availability of labor resources. The relatively favorable demographic situation in Georgia and Armenia is augmented, on the one hand, by the existence of a significant contingent of skilled labor force, and, on the other, by the possibilities of making the structure of employment more efficient. The intensification of agricultural production will make it possible to release a considerable number of workers here and create additional prerequisites for accelerated industrialization on the basis of more scientifically and technically advanced branches of industry (atomic energy, unique machine tool construction, instrument building and so forth). But, in our opinion, there is a certain disjunction between a number of scientific and technological developments and the solution to the essential regional problems, and orientation toward the development of technologies that do not sufficiently take into account the needs of the distant future or the specifics of regional-socio-economic conditions and tendencies in their development.

Both regions typically have hydro-energy resources, high productivity of agricultural production (in Central Asia--under the condition that irrigation systems are provided), and considerable supplies of fossil fuel (for example, gas in Central Asia, and the Tkibul'skoye, Tkvarchel'skoye, Turgayskoye and other deposits of coal).

Both regions have sufficient construction material resources. But despite all this and the absence of the labor shortage (on the whole), the development of construction in the Transcaucasian area is impeded, in particular, by the shortage of construction workers. And the reason lies in the high labor-intensiveness of construction work which, in the social aspect, cannot compete, especially with agricultural production. Similar phenomena are observed in agriculture itself, where certain branches, particularly feed production, are not adequately supplied with labor resources because of the high labor-intensiveness and relatively low labor efficiency when evaluating the existing system of economic indices. As a result of these and other factors, agriculture is not fully balanced in the regions under consideration.

To sum up, the selection of future technologies for the national economy of a specific inhabited region should envision:

comprehensive utilization of natural resources for each of the studied regions as well as for those which are joined to them by convenient transportation arterials;

limitation of the importing of energy resources from other regions through intense assimilation of internal sources on the basis of more efficient modern technologies for bringing them into economic circulation;

advantages obtained as a result of comprehensiveness of technological processes, the use of available raw materials and the production of modern processed materials, and also as a result of reducing economic chains and eliminating interdepartmental barriers;

a stronger material base for construction and increased labor productivity in the sphere of the national economy as a result of the utilization of light structures and new finishing materials;

changeover to an industrial basis of all agricultural production which is experiencing a shortage of labor resources because of high labor-intensiveness (mainly feed production);

the acceptability of developing industries from the standpoint of possible ecological consequences for the region and territories adjacent to it;

favorable influence on the structure of employment and on the ties between the regions and the economy of the entire country.

It would be expedient to form regional complexes in individual blocks, each of which would contain the main elements of the base technological processes. Then it would be possible to arrange a large industrial system with minimum enlistment of resources for this purpose from the national economy. Here it would be necessary for the products that are produced with the start-up of the first technological block to be used to accelerate the construction of the next one and make it less expensive.

At first glance it seems that stage-by-stage construction with internal utilization of part of the products that are produced for investment in the next blocks of the complex have no advantages over the same kind of stage-by-stage construction with the products of the first section being consumed not locally, but in other regions--

"throughout the national economy." For in the latter case the area of possible solutions is broader and, consequently, a solution can be found more efficiently than with the first of the alternatives. But then no attention is paid to such important principles of administration as the possibility of perceiving the entire economic chain and the dependence of conditions of activity in the subsequent stage on the results achieved in the preceding one (precisely the conditions of future activity and not remuneration obtained for labor during the past). These principles must be observed in order to accelerate construction, increase the substantiation of the plans and concretize the responsibility for their fulfillment.

In order to form a base multibranch technological schema, which satisfies the aforementioned conditions, for a long-term regional program, it is necessary first of all to find new and presently little-used large local sources of energy resources. In our opinion, for the Transcaucasian region one of these sources could be supplies of coal and combustible shale, and for the Central Asian region--solar energy. Let us briefly describe the corresponding variants of the technological schemata.

4. Waste-free Comprehensive Processing of Solid Fossil Fuels as a Basis of a Long-Term Regional Program

In the Transcaucasian region we know of two coal deposits (Tkibuli-Shaorskoye and Tkvarchel'skoye) and a number of deposits of combustible shale. With the traditional approach, shales are considered only as energy fuel with a low efficiency of combustion and, as a rule, cannot compete with concentrated or technological kinds of energy resources--petroleum and gas. As a result of this evaluation of shales, the geographical information about supplies of them is extremely limited. It is quite probable that on the territory of the region (as in the country as a whole) large and accessible new deposits can be found.

Ideas about the economic value of shales are radically changing with the approach to their utilization as a comprehensive raw material which contains both valuable mineral (inorganic) components and the proportion of reducing agents (carbon) necessary for their extraction. The mineral composition of shales and coals of Tkibuli-Shaorskoye deposit contain, in addition to silica, 30-35 percent aluminum oxide, 10-12 percent ferrous oxide, about 0.5 percent sulfur impurities and an insignificant quantity of calcium and magnesium oxides [15].

The Tkibuli-Shaorskoye deposit of fossil fuels has a number of specific features. The beds are as much as 4 meters wide with an ash content of 25 percent, moisture content of 5 percent and an overall sulphur content of 0.8 percent. The organic mass contains up to 76 percent carbon and 5 percent hydrogen [15]. The organization of highly productive extraction of the fuels in this deposit is complicated by the existence of deeply dipping beds (in a number of regions). But this aspect becomes much less significant with comprehensive electrothermal processing, since a mined mass containing only about 30 percent carbon can be used [16]. The possibility of using a furnace charge which has up to 0.6 tons of waste rock per one ton of shale radically changes the selection of mining work that is suitable for production technologies.

The proposed variant of the technological schema envisions remelting (after the appropriate neutralization and preparation) of charges in large ore-thermoelectric furnaces for obtaining an alloy of silicon and aluminum (aluminum-silicon); the blast furnace gases that are thus obtained should be used as energy bearers. Methods of smelting aluminum-silicon and refining it to produce aluminum and also a byproduct containing silicon and iron are sufficiently well known [16]. There is an iron smelting plant in operation in the region in the city of Zestafon with similar technology and furnaces which has skilled personnel already.

When resmelting the charge, which contains a mixture of shale (including--coal) and waste rock, one eliminates many difficulties related to the energy use of this kind of fossil fuel since the gases that are formed from the ore-thermal furnaces (carbon monoxide) with a heat-creating capacity of about 3,000 kilocalories per cubic meter can be efficiently used for producing energy with gas turbine installations (GTU) which are distinguished by their maneuverabilities which is considerably greater than that of steam turbine stations. This makes it possible to use GTU's advantageously during the peak period of the schedule for loading the network, reserving gas for the flow period. The importance of this kind of maneuvering is determined by the continuous increase of the proportion of atomic stations in the energy balance of the European part of the USSR and Caucasus, since it is not desirable to load these continuously [17].

The possibility of burning coal and shale from the Tkibuli-Shaorskoye deposit in a system of this kind of energy technology is not at all exceptional. Shales from a considerable part of the deposits that have been prospected have a sufficient quantity of silica and aluminum compounds [15]. Moreover, such a system is promising for processing coal from beds that are less productive and are found in rock with the necessary content of silicon and aluminum. This direction is extremely crucial because in the deposits that have been worked for a long time (for example, the Donets basin) the majority of high-capacity beds have been exhausted, and a changeover to beds with smaller capacities involves a decrease in labor productivity and the impossibility of using more efficient extracting equipment without mining "waste" rocks in quantities that are inadmissible for traditional methods of utilizing coal.

An important feature of this system is the more efficient utilization of secondary thermal resources. As we know, the temperature of the condensation water of an AES is too low to be used, for example, in hothouses, and to discharge it causes negative ecological consequences. But with the production of aluminum-silicon one forms a significant quantity of water with a temperature of up to 60-80 degrees centigrade, which makes it possible to combine the aforementioned sources of low-potential heat and use them at 40-45 degrees centigrade for mechanized hothouses (phytotrons) for industrial feed production; on cleared land it is possible to obtain up to 15-17 kg of feed units a year per one square meter of area.

Such a solution to the feed problem in the Transcaucasian area seems somewhat unusual, especially if one takes into account the favorable climatic conditions for producing feeds on open land. But the preferability of industrial production of feeds is brought about by the exceptionally high labor productivity which is characteristic of this kind of production with full mechanization of the process,

and independence of weather conditions and an economizing on areas, which could be planted in crops that are more efficient under the region's conditions and also the need to eliminate the harmful influence of the discharge of hot waters from the AES's and other enterprises. In the final analysis, this solution provides for an economy of labor and energy.

During the process of refining aluminum silicon, considerable quantities of iron and silica are formed as a byproduct; they can be used expediently as energy accumulating substances when they are leached in order to obtain hydrogen, and the latter can be used for synthesis of ammonia with subsequent transportation to enterprises for producing fertilizers (ammonia is easily transported along pipes over considerable distances). The hydrogen obtained from the wastes of the basic aluminum production increases the effectiveness of the entire complex. The silica residue can be used most efficiently for synthesizing cement clinkers.

During the first period of the implementation of the program light-weight aluminum structures and other high-quality construction materials should satisfy only local demand. Thus one reduces labor expenditures in construction, and this will create favorable conditions for acceleration of the start-up of the entire complex. Extensive utilization of light-weight structures in the region will make it possible to reduce transportation flows and carry out construction in locations that are difficult of access, which is especially important for a territory with a complex topography.

The first section of the programmed complex is the construction of a standard block with the withdrawal of about 420-500 megawatts from the energy network. The start-up of the standard block will create a basis for the construction of the subsequent sections in light-weight structures or highly durable cement, and finishing work will be reduced to a minimum. Thus conditions for the construction of the subsequent section will be created mainly through internal resources.

When constructing the second section it is necessary to keep in mind that "the construction of the Ignalinskaya AES with reactors has already been constructed . . . with a capacity of 1.5 million kilowatts," and "atomic electric power stations are constructed in the USSR as large energy complexes for a final installed capacity of 4-6 million kilowatts" [12, p 327].

5. The Development of Solar Energy as a Component in the Long-Term Program for the Central Asian Region

The potential for the development of solar energy in this region has been considered repeatedly, but nonetheless one should recall that there are 25 million hectares of land here where agriculture is not promising, but the energy potential of this area amounts to no less than 15 billion tons of conventional fuel a year (taking into account the amount of total radiation of 134 kilocalories per square second per year, the coefficient of reflection of 0.8 and the fuel efficiency factor of solar energy installations of 0.45).

This amount of energy potential is equivalent to 12.4 trillion cubic meters of natural gas, which exceeds the present level of its extraction more than 20-fold. Nonetheless, in the majority of predictions for the year 2000 the contribution of

solar energy to the balance is determined in an amount of no more than 1-2 percent (see, for example, [18]). In our opinion, these evaluations do not take into account the peculiarities of the Central Asian region or the situation in the national economy and are oriented only to the utilization of known types of solar installations.

Despite their considerable potential, modern solar installations cannot, of course, compete with traditional means of generation of energy bearers because solar energy is developing mainly along the path of creating less powerful installations for purely local purposes. They should include solar electric power stations even if their capacity reaches 50 megawatts. Elementary calculations show that in order to obtain the quantity of energy that will be produced by the Ignalinskaya AES with a capacity of 6,000 megawatts it would be necessary to construct 265 solar electric power stations of the tower type. The capital investments necessary to carry out this measure would be comparable for those of the construction of an AES (based on the calculation of 400 rubles' worth of capital investments per 1 kilowatt-hour--average [19]), and for the construction of each solar electric power station it would be necessary to spend no more than 10 million rubles; but just the construction of a 250 meter tower in an uninhabited region with increased seismicity essentially increases this amount, not to speak of the difficulties of constructing 265 sites. The situation cannot change in the future since the efficiency factor of solar electric power stations is limited in principle.

From these considerations it follows that it is necessary to find nontraditional ways of utilizing solar power installations. One of these ways can be to change these installations in order to obtain energy accumulating substances (EAV), whose significance consists in the possibility of preserving energy in the form of transportable energy bearers, which makes it possible to surmount the cyclical nature of the installations. Obtaining EAV's is a metallurgical process and is carried out on sets of solar metallurgical equipment.

In Odeillo (France) a solar furnace with a capacity of 1.2 megawatts has been functioning for about ten years. The temperature in it reaches up to 3,000 degrees centigrade with a diameter of the focus spot of 0.5 meters, and the condensor of the solar energy is a parabolic system with a diameter of 50 meters formed from 8,000 small concave mirrors [20]. Let us take such a furnace (in design it is similar to a converter in metallurgy) as a standard aggregate, although its unit capacity can be increased 3-5-fold, for in this case there are no essential limitations. The technological complex will include a system of such furnaces, a central enterprise and communications. The purpose of the furnace is to carry out during the daylight hours (8.2 hours) carbothermal reduction of silica with a removal of the gases that are formed--carbon monoxide (CO). For one ton of silicon one needs 6.6 million kilocalories, while one obtains 8.5 million kilocalories during the daylight hours, that is, the daily productivity of the equipment is 1.3 tons of silicon [20].

The schema envisions cooling the heated container at night and using its heat content for warming the reserved CO for freshening mineralized underground water and obtaining the still residues--salt mixtures. The fresh water is used locally or sent to an accumulating vessel through a pipeline. The cooled silicon is stored (including long-term storage) and shipped to the central enterprise. The mixture of silica and the reducing agent is prepared locally, and only the reducing agent is shipped in.

At night a new container is loaded with the charge and the process is repeated. The carbon monoxide is transported along a pipeline to the central enterprise which is located in the region where coal is extracted or less transportable petrochemical products are produced (viscous and heavy ones).

One central enterprise serves the entire network of thermal solar installations. The silicon that is conveyed to the enterprise is used for obtaining hydrogen by leaching [21], and the steam and hydrogen mixture is used for producing energy in large turbines. After purification of the mixture (up to 70 percent of the CO) and removal of the water, which is sent back into the system, the hydrogen is used for synthesizing methanol. One can add fine coal dust or semicoke (up to 15 percent) to the methanol; such a suspension is easily transported along the main pipeline [22]. Electric energy is produced continually at the central enterprise by utilizing the heat content and the pressure of the steam and hydrogen mixture and by burning the remaining part of the CO (30 percent). The byproducts from the leaching again participate in the technological cycle (silica) and therefore there is no need to extract silica. The central enterprise also has a halurgy production which uses well known methods to extract from the salt production sodium sulfate, magnesium sulfate and other products.

The strategy of the assimilation of desert and semi-desert land in the Central Asian region in order to develop a multibranch economy and supply other regions with electric power and methanol consists in the creation of standard installation-modules which are located on land that is unsuitable for agricultural production, with subsequent processing of the products at a large central enterprise. The byproducts can be effectively used locally (water--for irrigation farming and animal husbandry, and construction materials--for the creation of facilities of the infrastructure). Let us note the most important qualities of this comprehensive technology:

standard modules are manufactured by the flow line method and assembled beforehand, that is, lengthy construction in places that are remote from densely populated territories of the region is replaced by the installation of facilities that are completely ready for operation;

sets of equipment with extremely large unit capacities are used at the central enterprise, which makes it possible to increase the efficiency factor of the generation of energy and reduces the metal-intensiveness of equipment and the time periods for construction;

it is possible to create the complex with minimal initial investments according to the principle of "minimal initiating impulse" [8] utilizing the products that are formed for further expansion of the system;

the location of the network of standard modules provides for gradual assimilation of local resources, the construction of communications facilities and the maneuvering of reserves of water and energy;

there can be continuous delivery of energy without daily or seasonal fluctuations, and a reserve of energy bearers can also be created;

the use of halurgy resources makes it possible to develop the mineral fertilizer industry;

the system is distinguished by complete ecological safety;

there are no principle limitations on the expansion of the scope of the system (solid fuel resources in the region are insignificant).

In conclusion let us note that when developing long-term regional programs on the basis of comprehensive processing of local resources, success depends on the completeness of the coordination of four aspects: analysis of national economic and branch problem situations which determine the "external" requirements of the programs; the disclosure of internal motives and stimuli for the development; study of local resource conditions; and combining technological schema which meet the general requirements formulated in section 3 as well as specific requirements. In our view, when forming such regional programs it is hardly possible to utilize such methods that are usually included in special-purpose programming as constructing a tree of goals, ranking them, evaluating their relative significance and so forth. An investigation of specific technological possibilities shows that reducing the diversity of rational variants as key components of the technological schema are fixed takes place in such a way that there is no justification for applying models of linear and nonlinear program. Only network and combinatorial models can be extremely useful when applying the principle schema to the working plan or in the stage of organization of construction.

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